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SCHEMATIC  
BOOK

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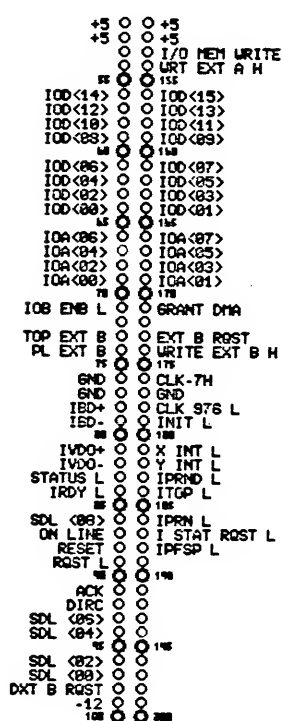
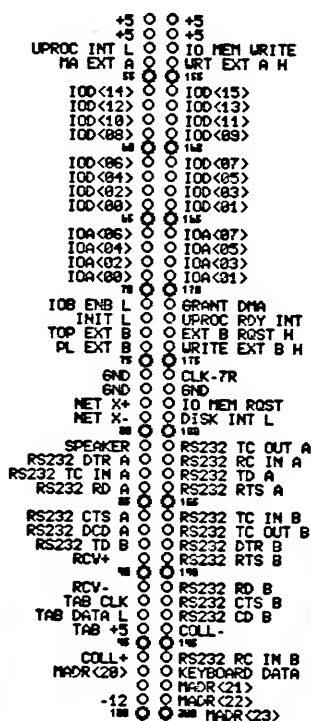
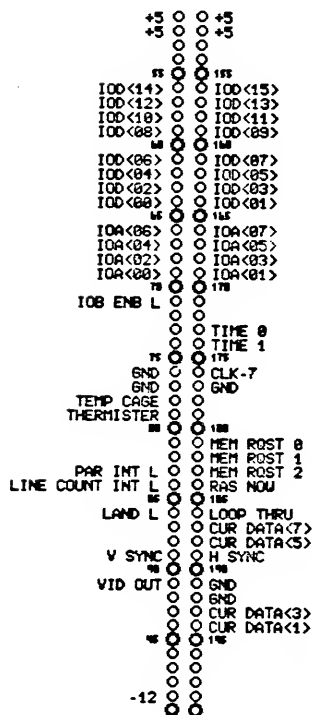
VERSION B  
BOOK No. \_\_\_\_\_  
VOLUME I  
DATE 2/85

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# CPU OPTION

```

+12 0 0 +12
+12 0 0
5 0 0 15
MDI<14> 0 0 MDI<15>
MDI<12> 0 0 MDI<13>
MDI<18> 0 0 MDI<11>
MDI<88> 0 0 MDI<89>
18 0 0 118
MDI<86> 0 0 MDI<87>
MDI<84> 0 0 MDI<85>
MDI<82> 0 0 MDI<83>
MDI<80> 0 0 MDI<81>
15 0 0 115
MDO<14> 0 0 MDO<15>
MDO<12> 0 0 MDO<13>
MDO<18> 0 0 MDO<11>
MDO<88> 0 0 MDO<89>
18 0 0 118
MDO<86> 0 0 MDO<87>
MDO<84> 0 0 MDO<85>
MDO<82> 0 0 MDO<83>
MDO<80> 0 0 MDO<81>
15 0 0 115
MADR<18> 0 0 MADR<19>
MADR<16> 0 0 MADR<17>
MADR<14> 0 0 MADR<15>
MADR<12> 0 0 MADR<13>
18 0 0 118
MADR<18> 0 0 MADR<11>
MADR<88> 0 0 MADR<89>
MADR<86> 0 0 MADR<87>
MADR<84> 0 0 MADR<85>
15 0 0 115
MADR<82> 0 0 MADR<83>
MADR<80> 0 0 MADR<81>
MADR<28> 0 0 MADR<21>
MADR<22> 0 0 MADR<23>
18 0 0 118
MADR<22> 0 0 MDO VALID H
OPD<6> 0 0 OPD<7>
OPD<4> 0 0 OPD<5>
OPD<2> 0 0 OPD<3>
15 0 0 115
OPD<8> 0 0 OPD<1>
RELD OP 0 0 P ABORT
MR MA 0 0 HOLD OFF L
+5 0 0 +5
+5 0 0 +5

```

```

+5 0 0 +5
+5 0 0 +5
UPROC INT L 0 0 IO MEM WRITE
18 0 0 118
IOO<14> 0 0 IOO<15>
IOO<12> 0 0 IOO<13>
IOO<18> 0 0 IOO<11>
IOO<88> 0 0 IOO<89>
18 0 0 118
IOO<86> 0 0 IOO<87>
IOO<84> 0 0 IOO<85>
IOO<82> 0 0 IOO<83>
IOO<80> 0 0 IOO<81>
15 0 0 115
IOA<86> 0 0 IOA<87>
IOA<84> 0 0 IOA<85>
IOA<82> 0 0 IOA<83>
IOA<80> 0 0 IOA<81>
18 0 0 118
IOB ENB L 0 0 GRANT DMA
INIT L 0 0
LA 15 0 0 TIME 8
LB 15 0 0 TIME 1
18 0 0 118
GND 0 0 CLK-7R
GND 0 0
R15 0 0 IO MEM RQST
18 0 0 118
MRQST 8 0 0
MRQST 1 0 0
18 0 0 118
RO 0 0
BPC 2 0 0 BPC 3
BPC 8 0 0 BPC 1
18 0 0 118
I/O OPEN L 0 0 DST
EN CPU M CNT L 0 0 CACHE ON
TST 0 0 WAIT
MRQST 2 0 0 MRQST 3
18 0 0 118
ARITH X 0 0
ARITH Y 0 0
-12 0 0

```

# CPU

```

+12 0 0 +12
+12 0 0
5 0 0 15
MDI<14> 0 0 MDI<15>
MDI<12> 0 0 MDI<13>
MDI<18> 0 0 MDI<11>
MDI<88> 0 0 MDI<89>
18 0 0 118
MDI<86> 0 0 MDI<87>
MDI<84> 0 0 MDI<85>
MDI<82> 0 0 MDI<83>
MDI<80> 0 0 MDI<81>
15 0 0 115
MDO<14> 0 0 MDO<15>
MDO<12> 0 0 MDO<13>
MDO<18> 0 0 MDO<11>
MDO<88> 0 0 MDO<89>
18 0 0 118
MDO<86> 0 0 MDO<87>
MDO<84> 0 0 MDO<85>
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MDO<80> 0 0 MDO<81>
15 0 0 115
MADR<18> 0 0 MADR<19>
MADR<16> 0 0 MADR<17>
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15 0 0 115
MADR<82> 0 0 MADR<83>
MADR<80> 0 0 MADR<81>
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18 0 0 118
NET INT L 0 0
MADR<22> 0 0 MDO VALID H
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OPD<4> 0 0 OPD<5>
OPD<2> 0 0 OPD<3>
15 0 0 115
OPD<8> 0 0 OPD<1>
RELD OP 0 0 P ABORT
MR MA 0 0 HOLD OFF L
+5 0 0 +5
+5 0 0 +5

```

```

+5 0 0 +5
+5 0 0 +5
UPROC INT L 0 0 IO MEM WRITE
MDO VALID L 0 0 POWER DOWN L
18 0 0 118
IOO<14> 0 0 IOO<15>
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IOO<18> 0 0 IOO<11>
IOO<88> 0 0 IOO<89>
18 0 0 118
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IOO<82> 0 0 IOO<83>
IOO<80> 0 0 IOO<81>
15 0 0 115
IOA<86> 0 0 IOA<87>
IOA<84> 0 0 IOA<85>
IOA<82> 0 0 IOA<83>
IOA<80> 0 0 IOA<81>
18 0 0 118
IOB ENB L 0 0 GRANT DMA
INIT L 0 0 Z80 READY
LA 15 0 0 TIME 8
LB 15 0 0 TIME 1
18 0 0 118
GND 0 0 CLK-7
GND 0 0
TEMP 0 0 IO MEM RQST
R15 0 0 DISK INT L
18 0 0 118
MRQST 8 0 0 MEM RQST ST0
MRQST 1 0 0 MEM RQST ST1
PAR INT L 0 0 MEM RQST ST2
LINE COUNT INT L 0 0 RAS NOW
18 0 0 118
RO 0 0 X INT L
Y INT L 0 0
BPC 2 0 0 BPC 3
BPC 8 0 0 BPC 1
18 0 0 118
I/O OPEN L 0 0 DST
EN CPU M CNT L 0 0 CACHE ON
TST 0 0 WAIT
MRQST 2 0 0 MRQST 3
18 0 0 118
ARITH X 0 0 DIAS INC
ARITH Y 0 0 BOOT SU L
-12 0 0
18 0 0 118

```

### ETHERNET

GND 1 0 0 2 COLL-  
 COLL+ 3 0 0 1 NET X-  
 NETX+ 5 0 0 4  
 NETR+ 7 0 0 8 NET R-  
 GND 9 0 0 16 +12  
 11 0 0 12  
 13 0 0 14  
 15 0 0 16

### RS232A

GND 1 0 0 2  
 RS232 TD A 3 0 0 1 RS232 TC IN A  
 RS232 RD A 5 0 0 4 RS232 RC A  
 RS232 RTS A 7 0 0 8  
 RS232 CTS A 9 0 0 16  
 GND 11 0 0 12  
 RS232 DCD A 13 0 0 14 RS232 DTR A  
 15 0 0 16  
 17 0 0 18  
 19 0 0 20  
 21 0 0 22 RS232 TC OUT A  
 23 0 0 24  
 25 0 0 26

### RS232B

GND 1 0 0 2  
 RS232 TD B 3 0 0 1 RS232 TC IN B  
 RS232 RD B 5 0 0 4 RS232 RC B  
 RS232 RTS B 7 0 0 8  
 RS232 CTS B 9 0 0 16  
 GND 11 0 0 12  
 RS232 DCD B 13 0 0 14 RS232 DTR B  
 15 0 0 16  
 17 0 0 18  
 19 0 0 20  
 21 0 0 22 RS232 TC OUT B  
 23 0 0 24  
 25 0 0 26

### SERIAL 8

+5 28 0 0 1 GND  
 IO0<87> 19 0 0 2 IOA<87>  
 IO0<86> 18 0 0 3 IOA<86>  
 IO0<85> 17 0 0 4 IOA<85>  
 IO0<84> 16 0 0 5 IOA<84>  
 IO0<83> 15 0 0 6 IOA<83>  
 IO0<82> 14 0 0 7 IOA<82>  
 IO0<81> 13 0 0 8 IOA<81>  
 IO0<80> 12 0 0 9 IOA<80>  
 IOB ENB L 11 0 0 16 GND

### STREAMER

GND 1 0 0 2 SDL<8>  
 GND 3 0 0 1 SDL<7>  
 GND 5 0 0 4 SDL<6>  
 GND 7 0 0 8 SDL<5>  
 GND 9 0 0 16 SDL<4>  
 GND 11 0 0 12 SDL<3>  
 GND 13 0 0 14 SDL<2>  
 GND 15 0 0 16 SDL<1>  
 GND 17 0 0 18 SDL<0>  
 GND 19 0 0 20 ONLINE  
 GND 21 0 0 22 ROST L  
 GND 23 0 0 24 RESET  
 GND 25 0 0 26 XFER  
 GND 27 0 0 28 ACK  
 GND 29 0 0 30 RDY  
 GND 31 0 0 32 EXC  
 GND 33 0 0 34 DIRC

### VIDEO



### DISPLAY

+12V 1 0 0 2 TAB CLK  
 SPEAKER 3 0 0 1 GND  
 GND 5 0 0 4 LOOP  
 H SYNC 7 0 0 8 LOAD L  
 GND 9 0 0 16 KEO DATA  
 V SYNC 11 0 0 12 GND  
 GND 13 0 0 14  
 TAB DATA 15 0 0 16

### DDS

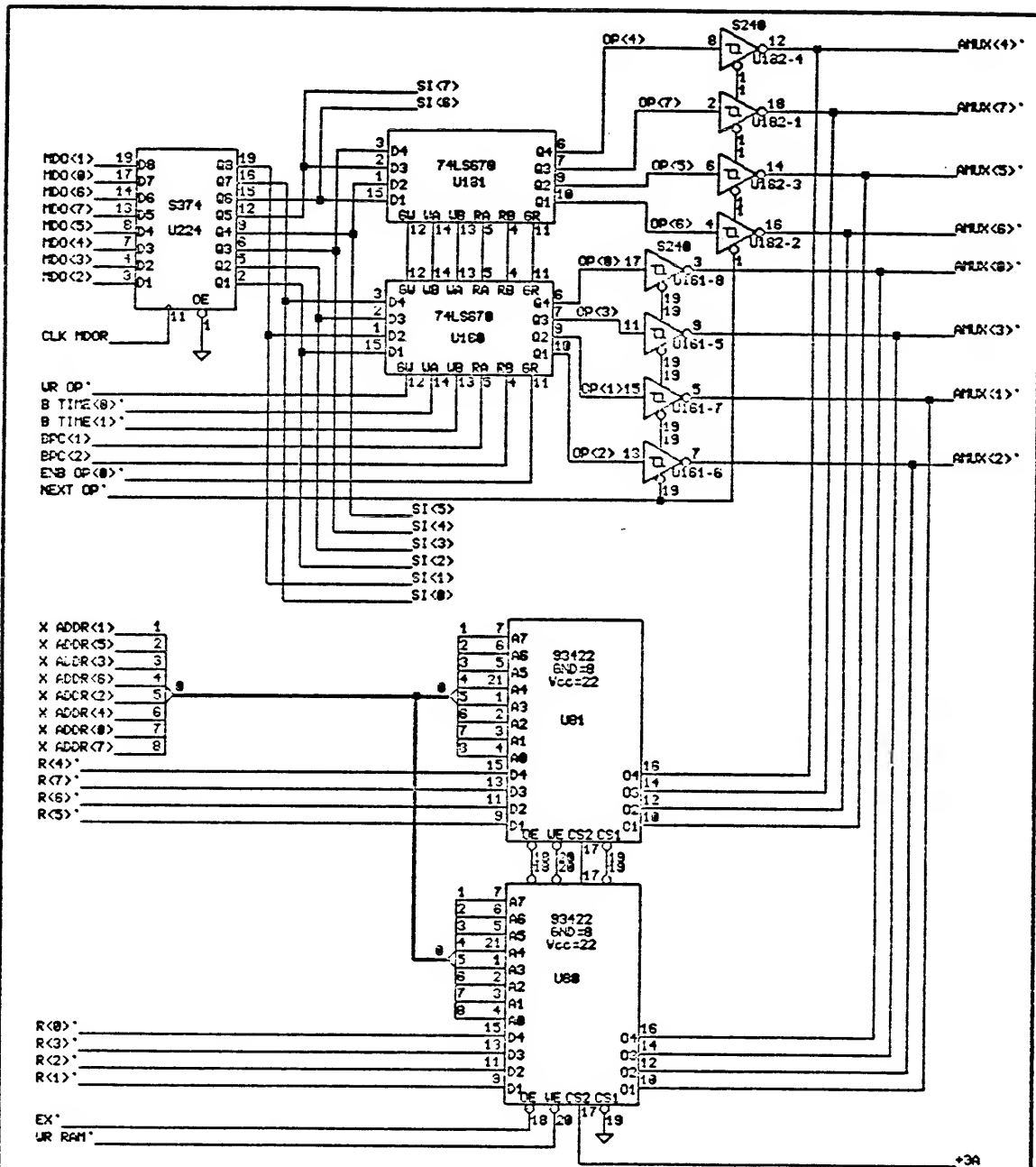
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 GND 3 0 0 1 DIAG INC  
 GND 5 0 0 4 BOOT SW L  
 GND 7 0 0 8  
 9 0 0 16  
 11 0 0 12  
 13 0 0 14

### PRINTER

IVDO+ 1 0 0 2  
 CLK 976 3 0 0 1 GND  
 STATUS L 5 0 0 4 GND  
 IPRN L 7 0 0 8 GND  
 ISTATKOST L 9 0 0 16 GND  
 IPFSP L 11 0 0 12 GND  
 IRDY L 13 0 0 14 GND  
 IPRND L 15 0 0 16 GND  
 ITOP L 17 0 0 18 GND  
 19 0 0 20  
 21 0 0 22 IBD-  
 IBD+ 23 0 0 24 IBD-  
 IVCO- 25 0 0 26

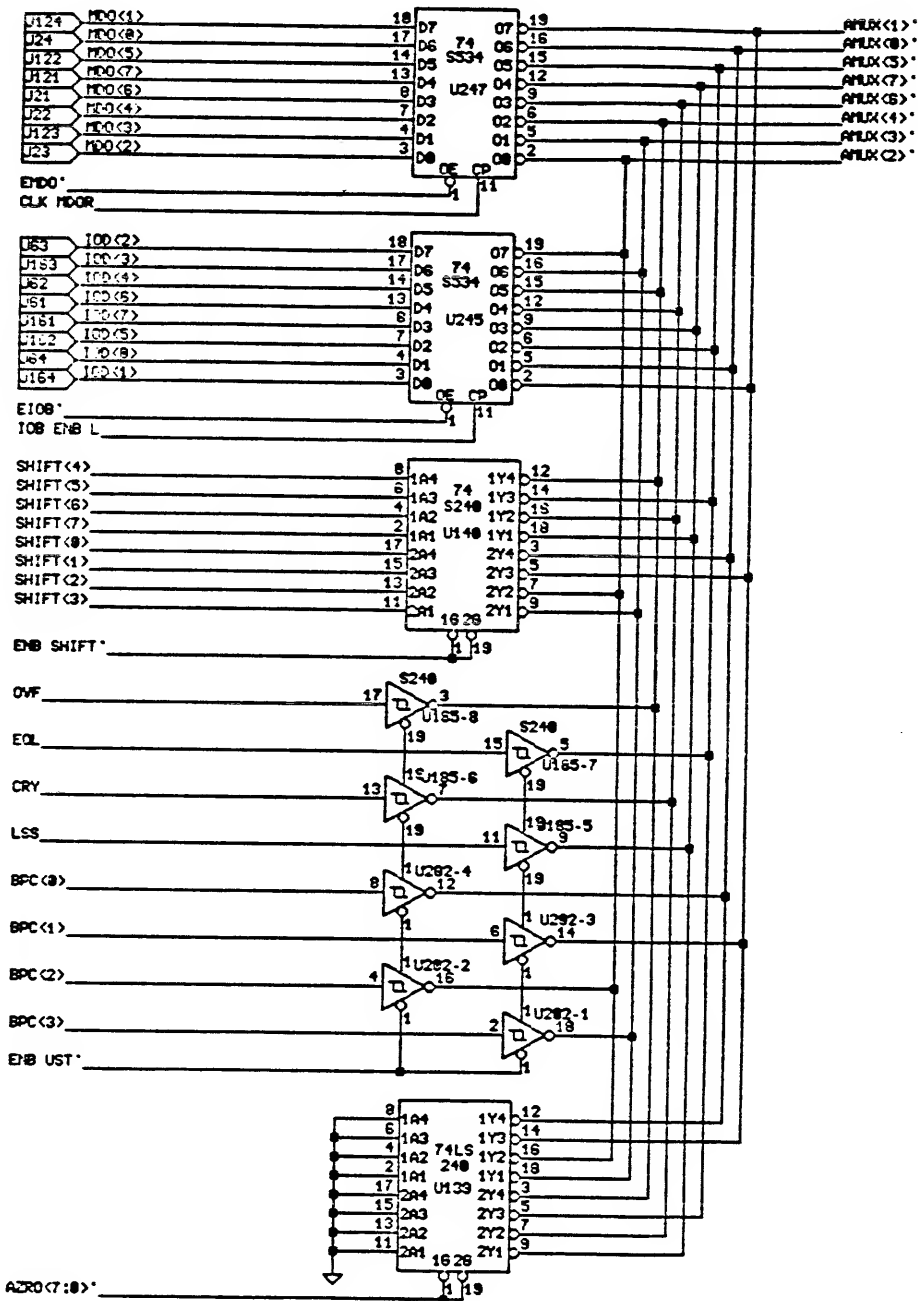
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 GPB DIO<82> 3 0 0 1 GPB DIO<87>  
 GPB DIO<83> 5 0 0 4 GPB DIO<88>  
 GPB DIO<84> 7 0 0 8 GPB REN  
 GPB EDI 9 0 0 16 GND  
 GPB DAV 11 0 0 12 GND  
 GPB NRFD 13 0 0 14 GND  
 GPB MDAC 15 0 0 16 GND  
 GPB IFC 17 0 0 18 GND  
 GPB SRQ 19 0 0 20 GND  
 GPB ATM 21 0 0 22 GND  
 GND 23 0 0 24  
 GPB DIO<85> 25 0 0 26



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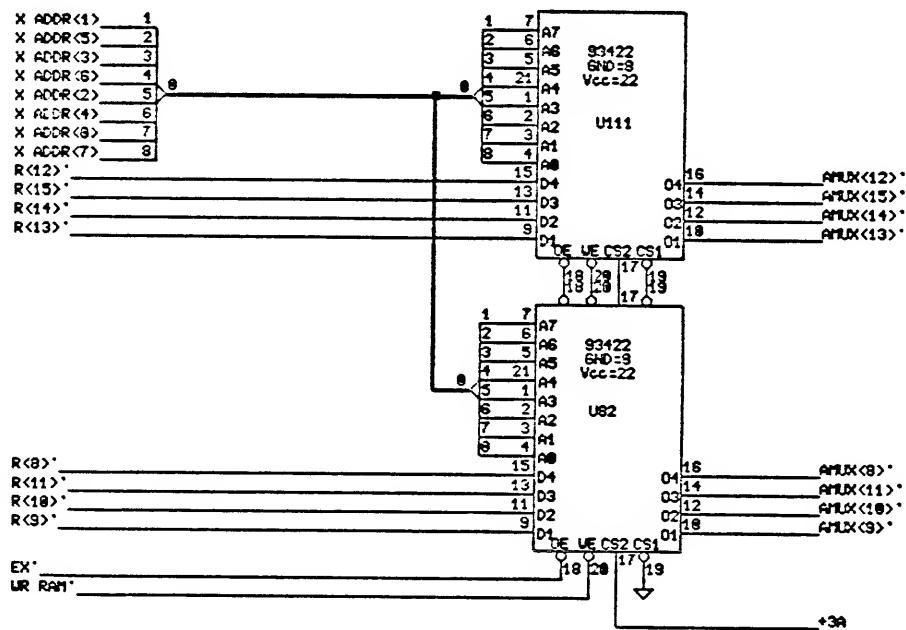
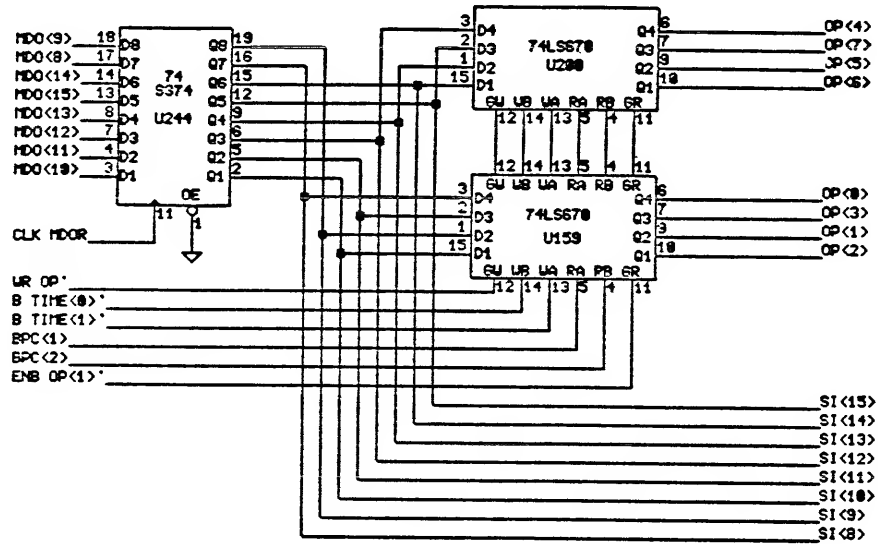
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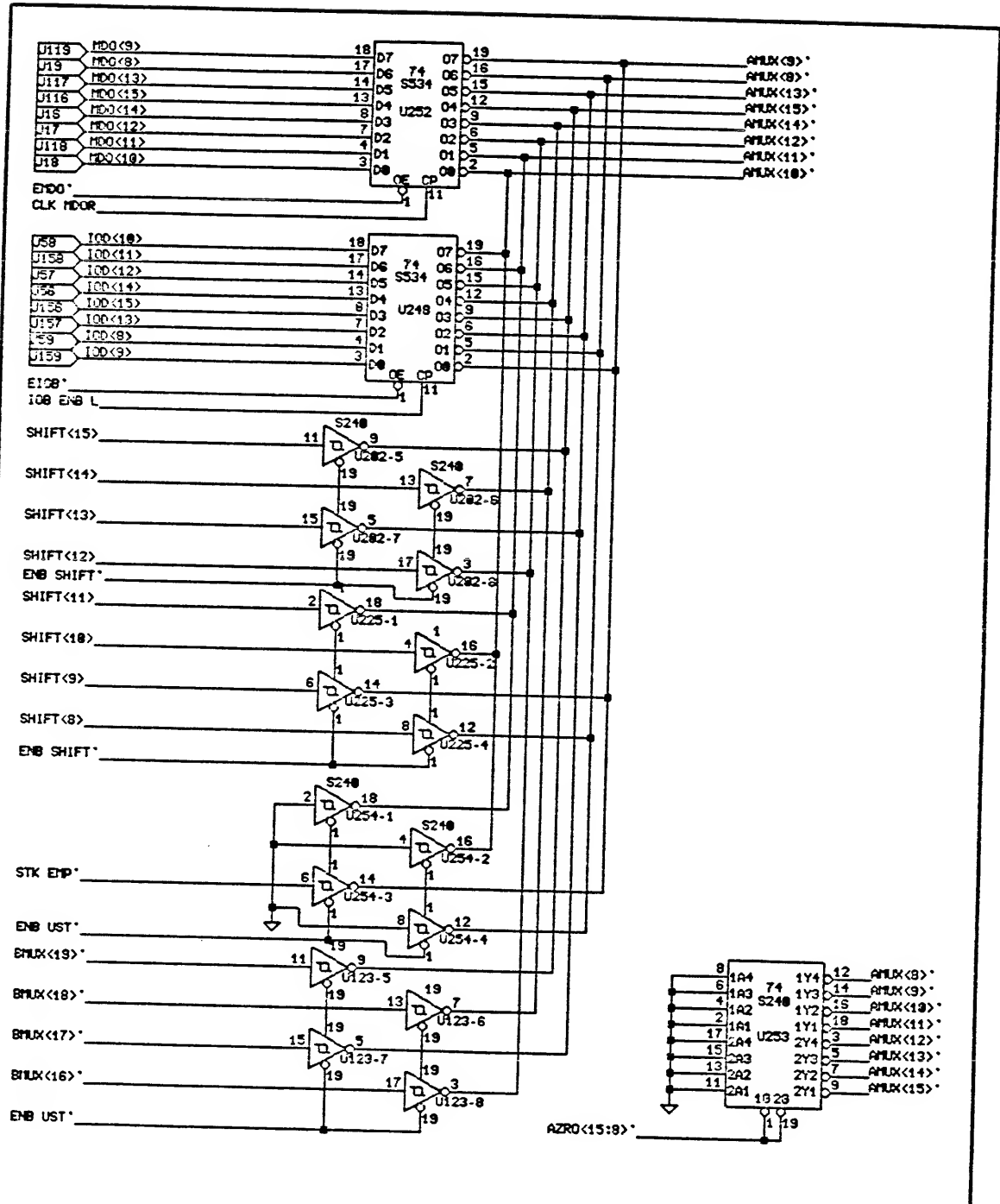
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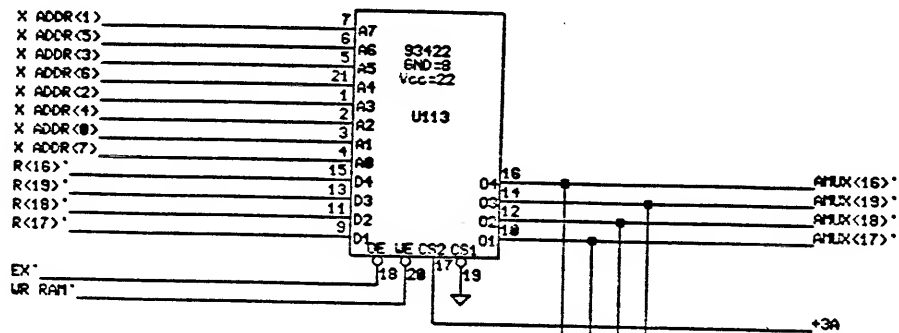
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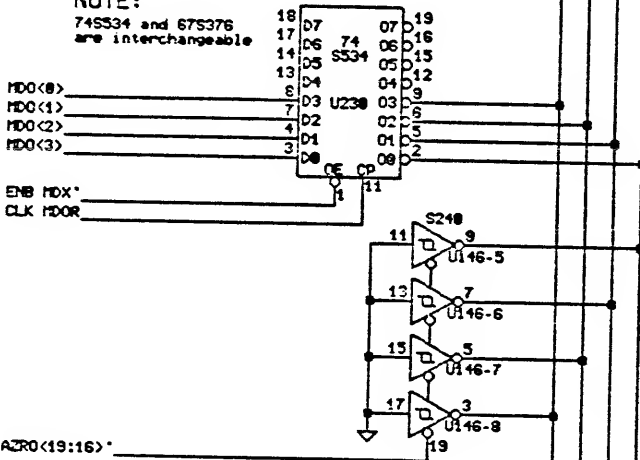
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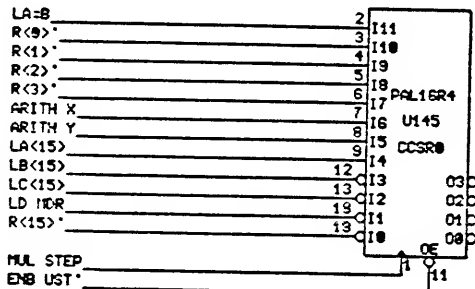
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				PROJ : C P U 1 8 K Version A					PAGE 4 OF 45		
23 Aug 84 11:26:06 a94.real.db											



NOTE:  
74S534 and 67S376  
are interchangeable



AZRO<19:16>\*



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TITLE

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a85.dp

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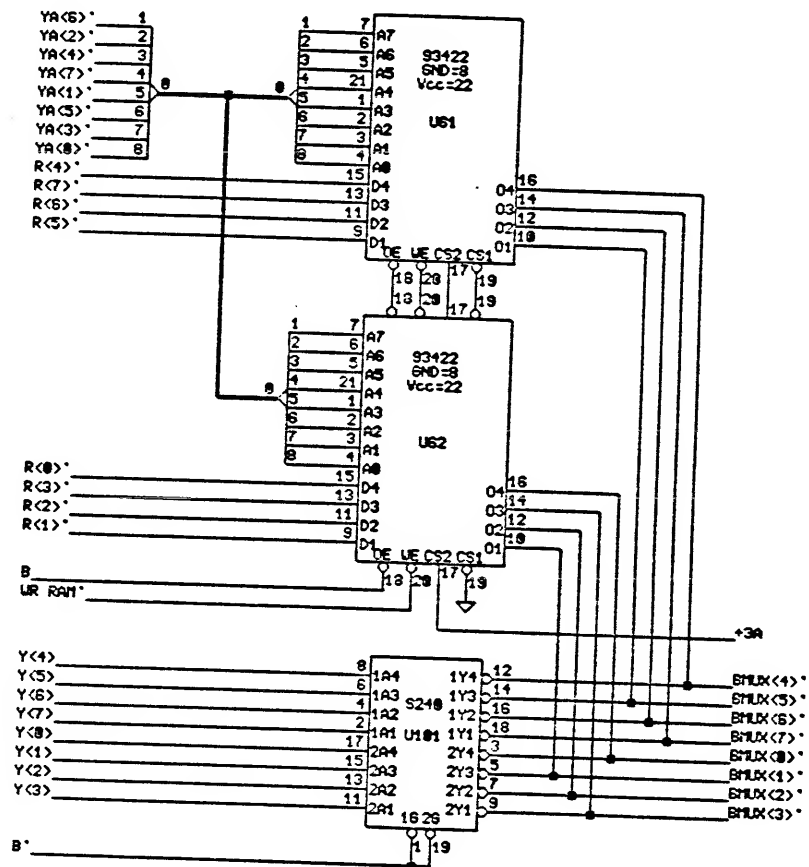
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PROJ : C P U 1 6 K Version A

PAGE 5 OF 45



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PERQ

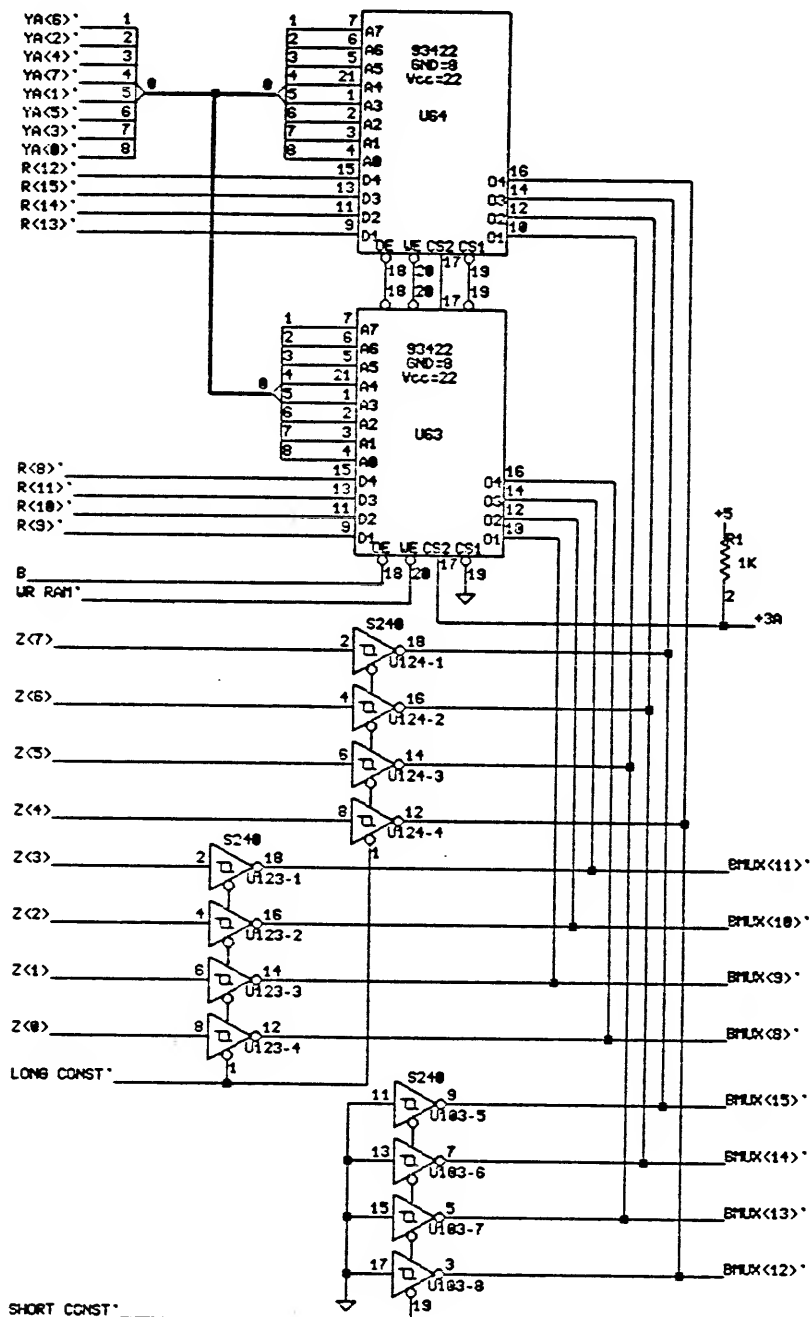
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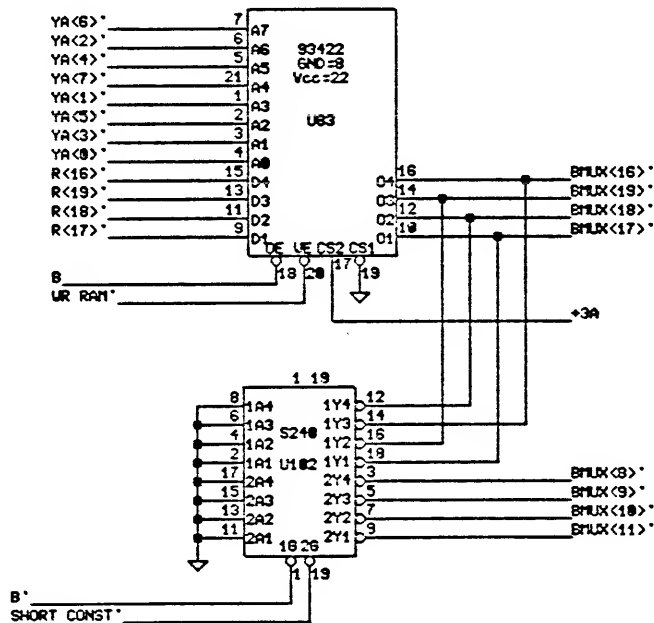
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PROJ : CPU 16 K Version A			PAGE 7 OF 15	



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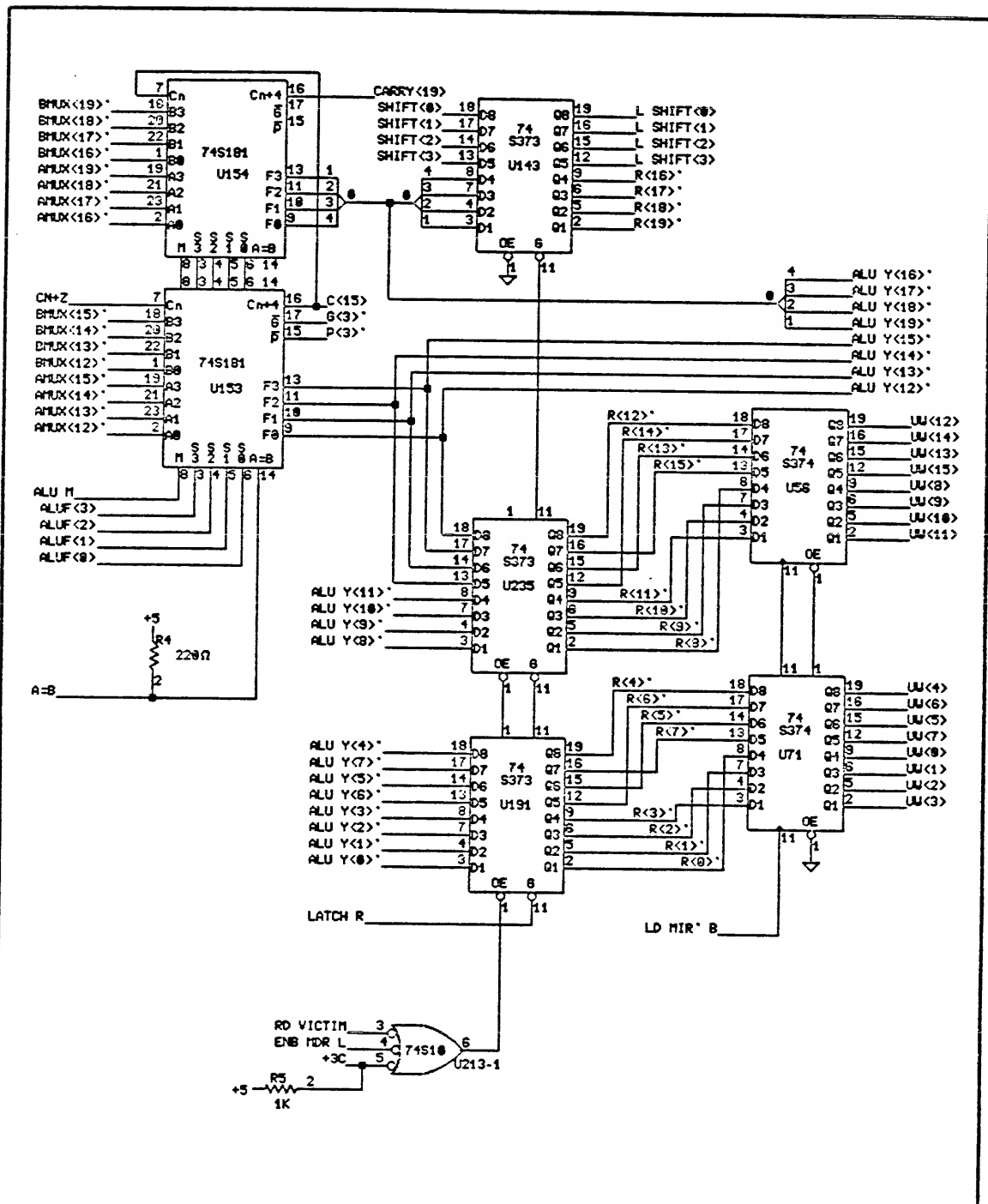
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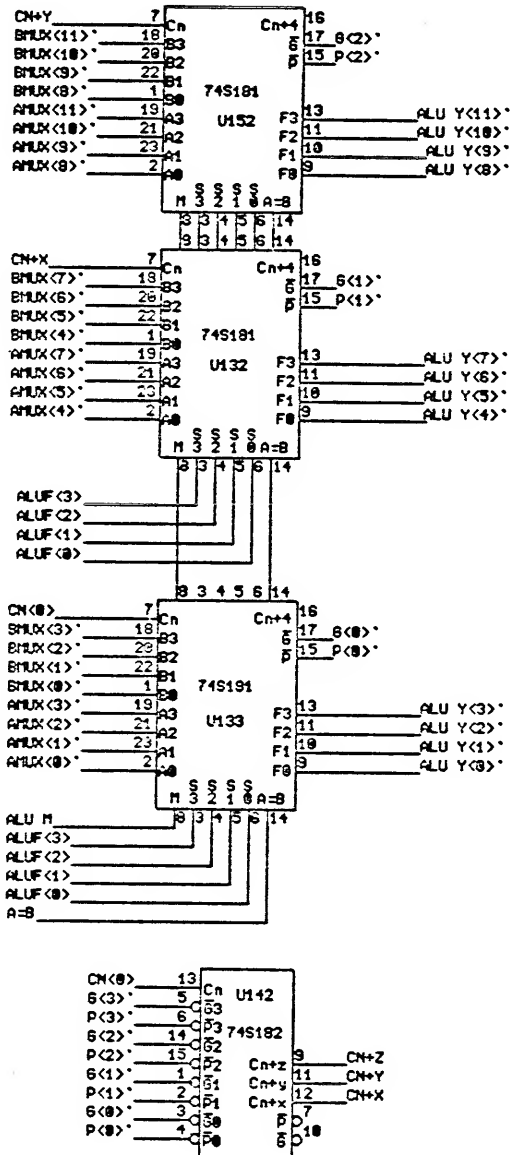
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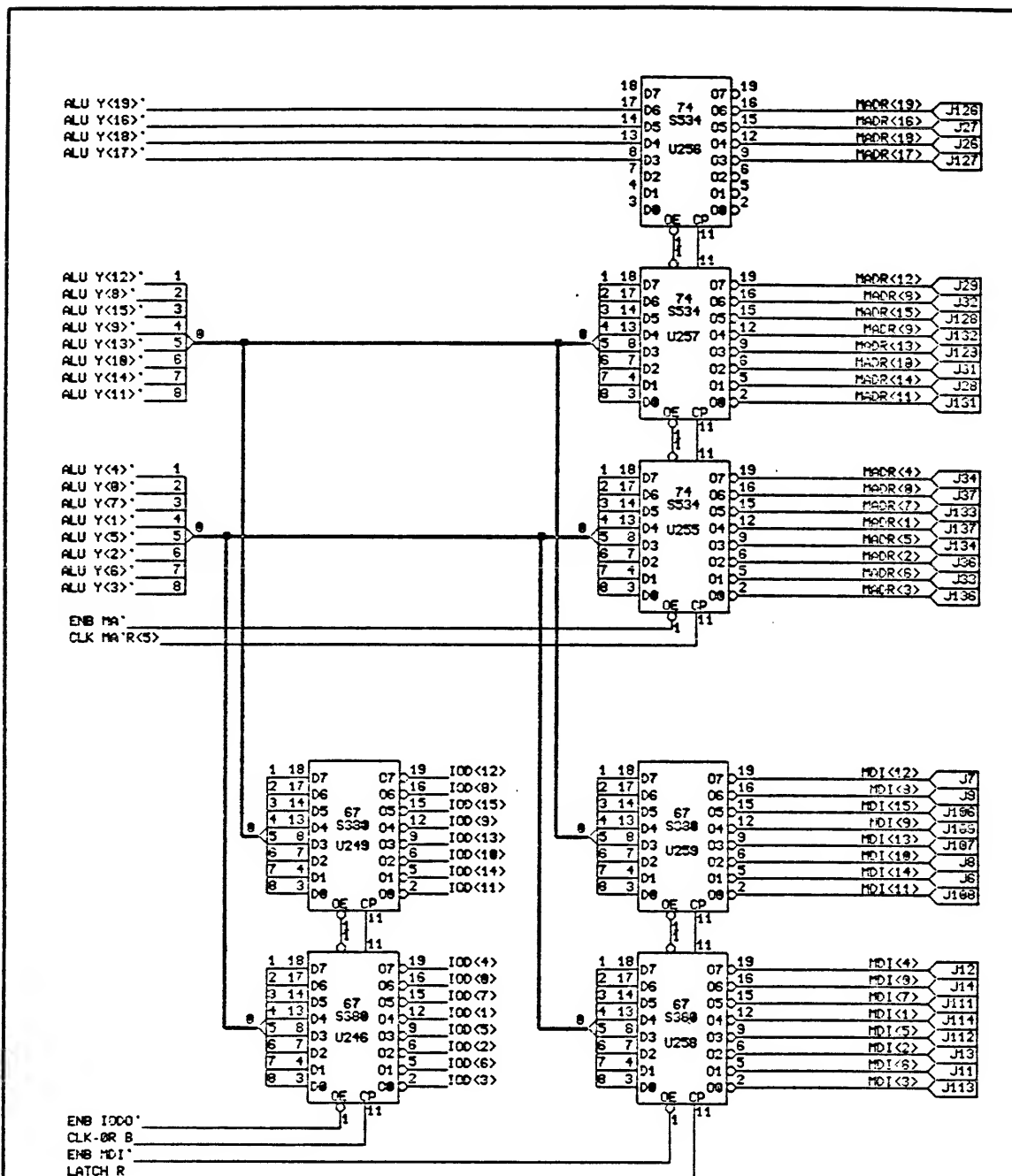
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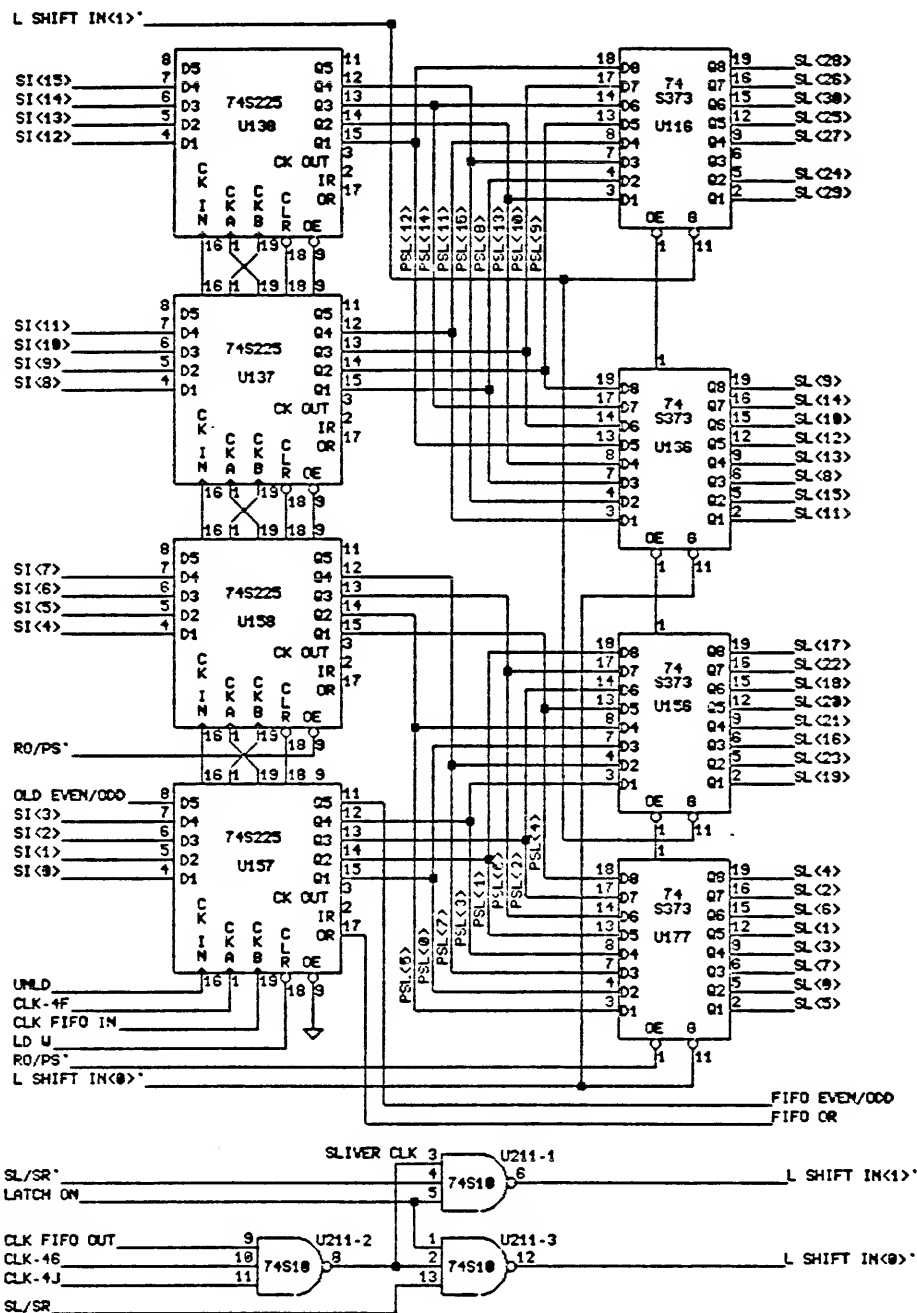
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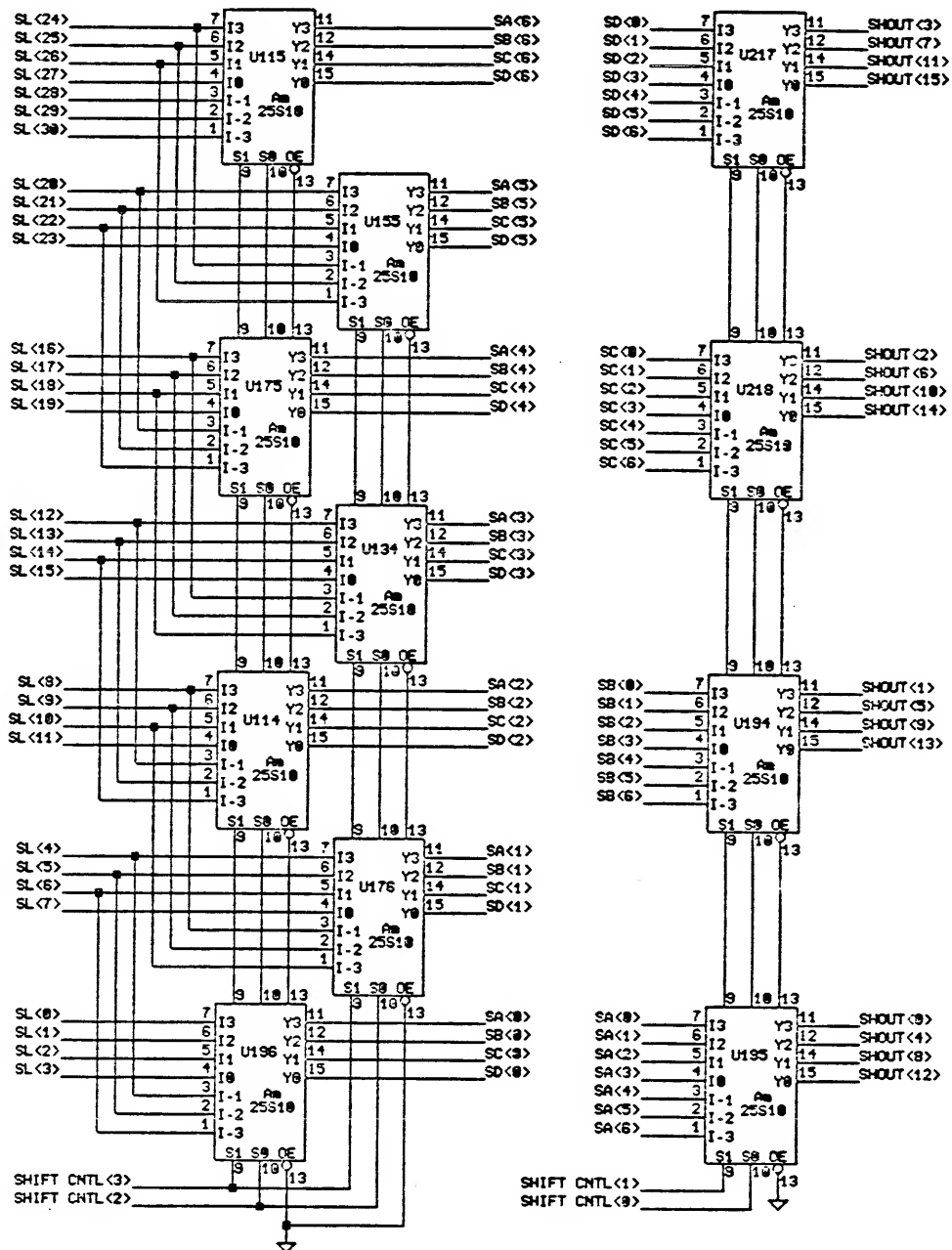
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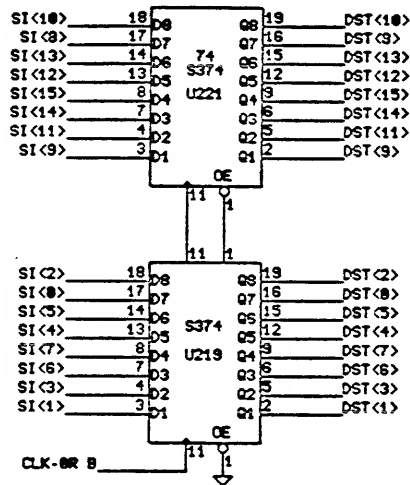
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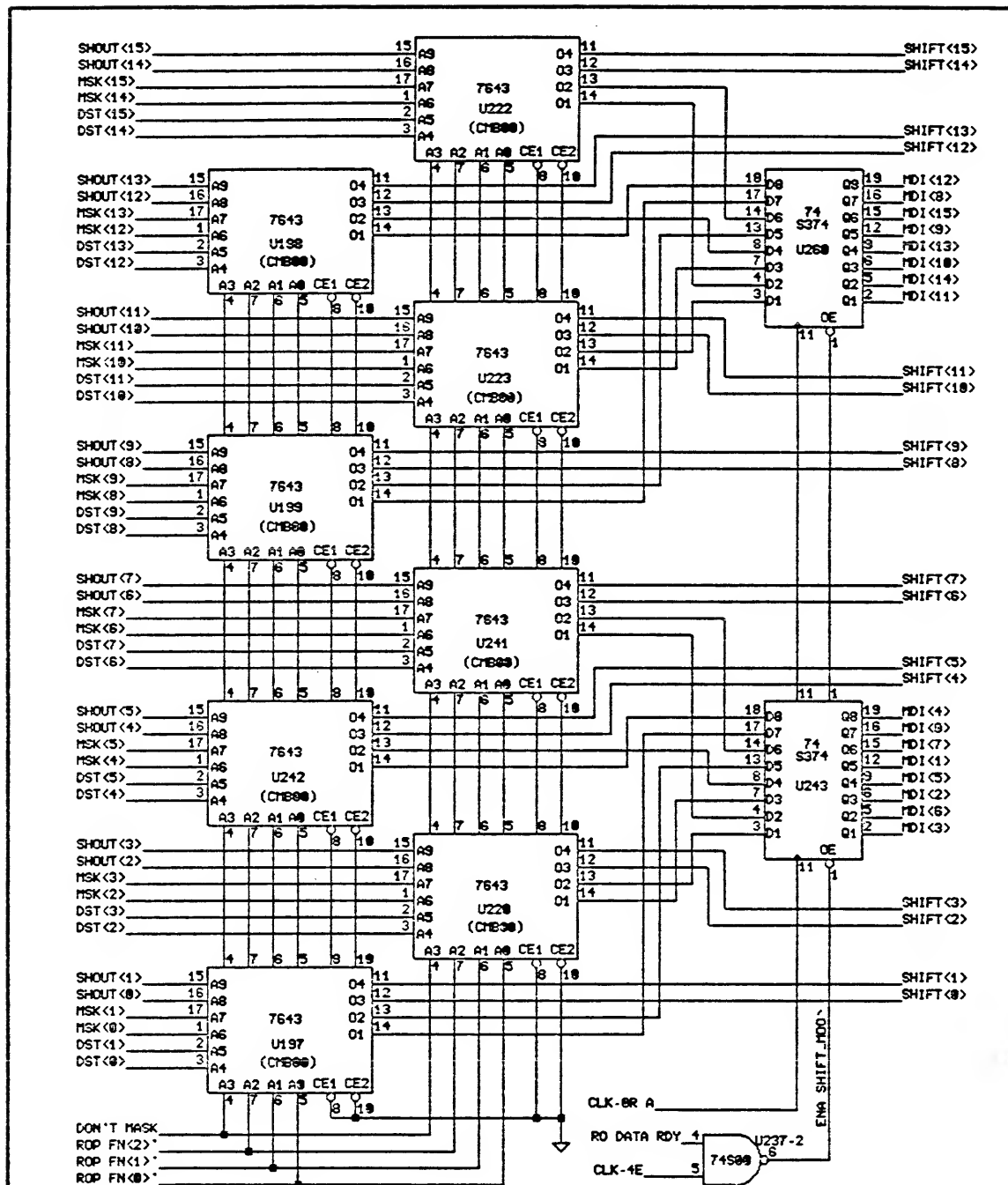
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RASTER OP REGISTER

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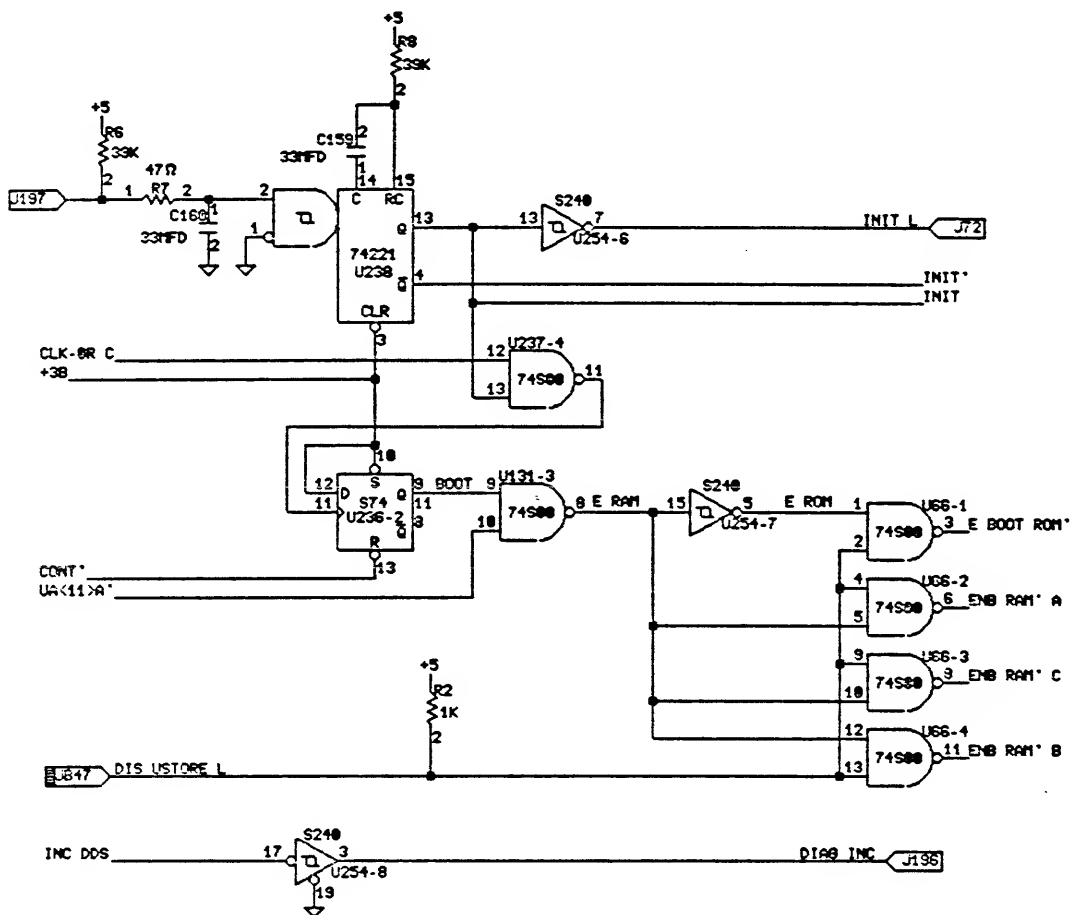
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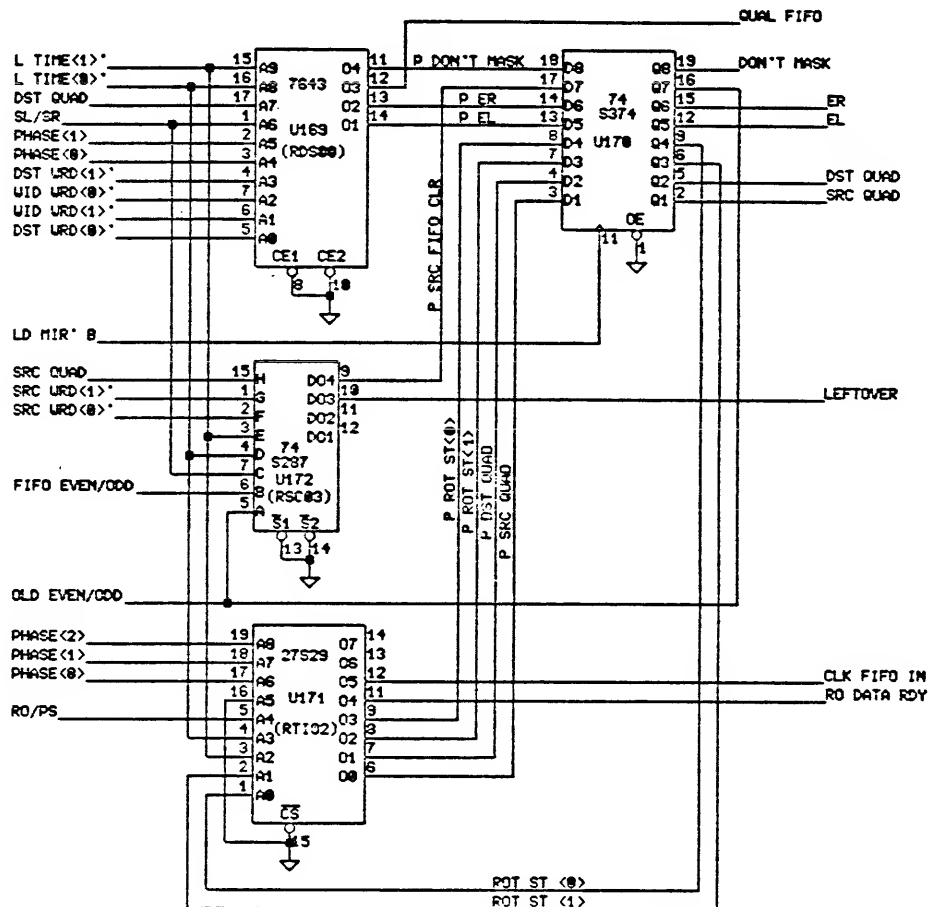
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TITLE

BOOT

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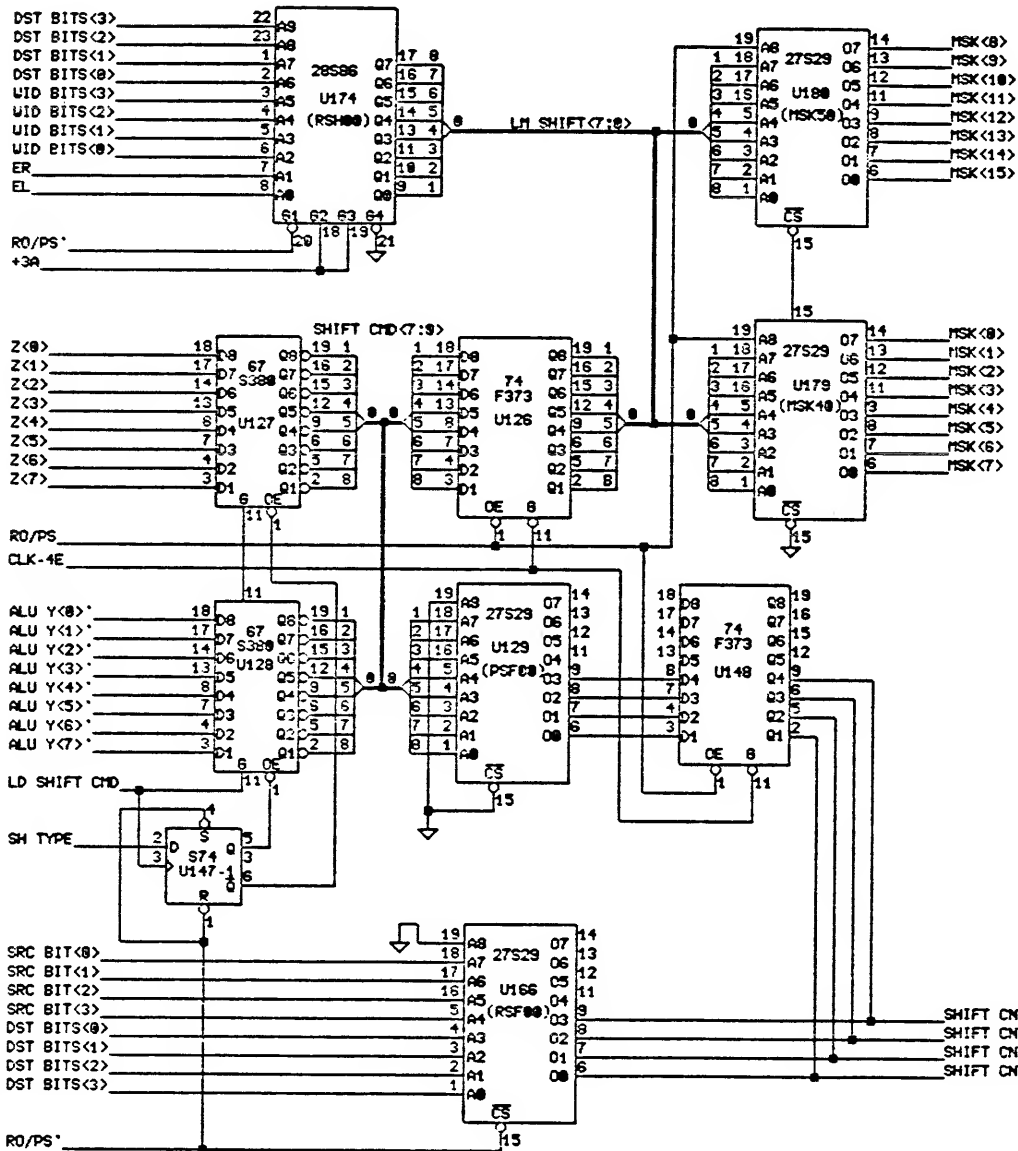
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TITLE				a18.dp	
RASTER OP STATE MACHINE					
SIZE	CODE	IDENTIFICATION		VAR	REV
A	1 1	1 3 3 2 -		8 2	A
PROJ : C P U 1 6 K Version A				PAGE 18 OF 45	

**PERQ**

DESIGNED	UCH	
DRAWN	13 Aug 82	SBokse
UPDATED	AFR/32/84	STECK

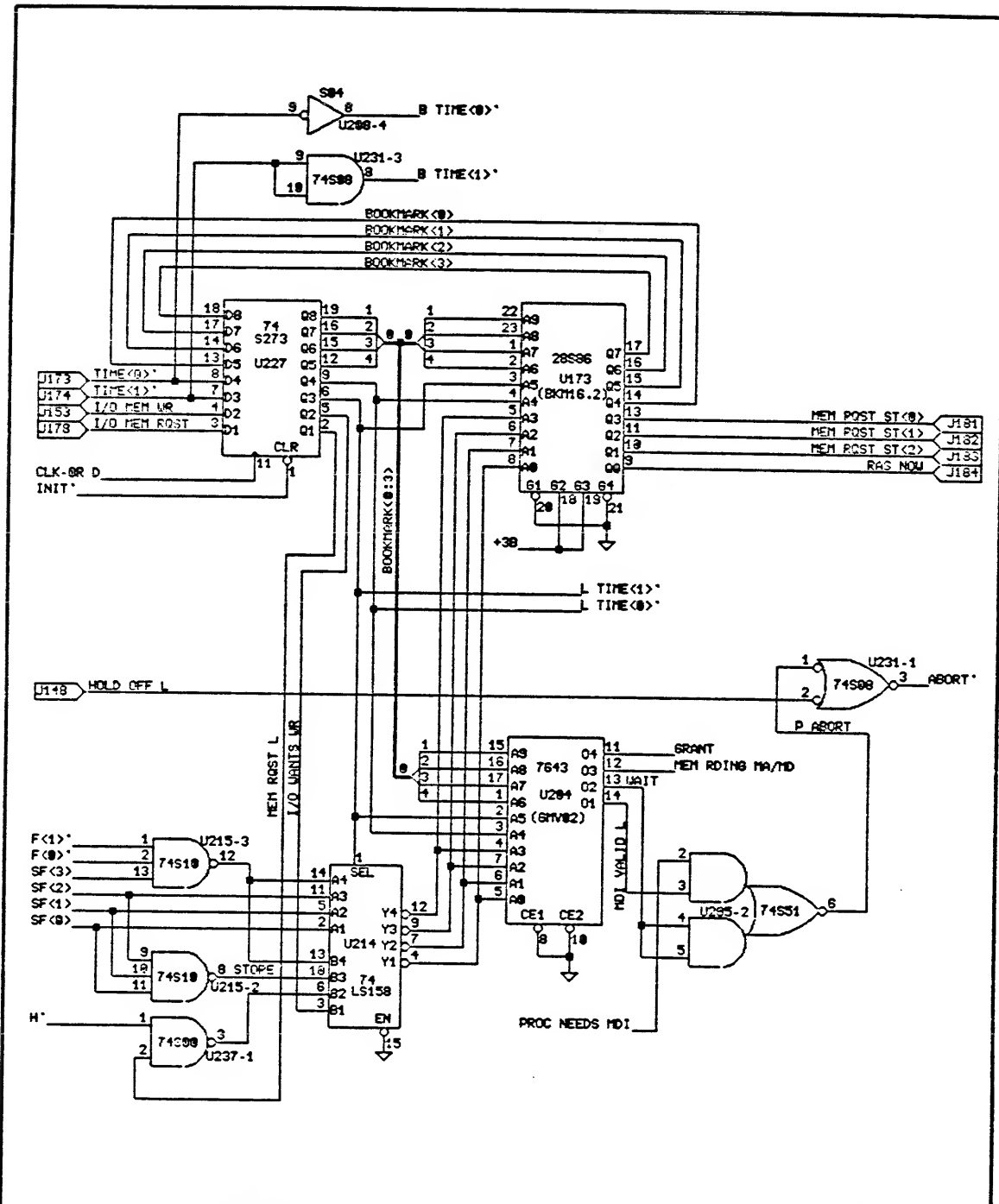


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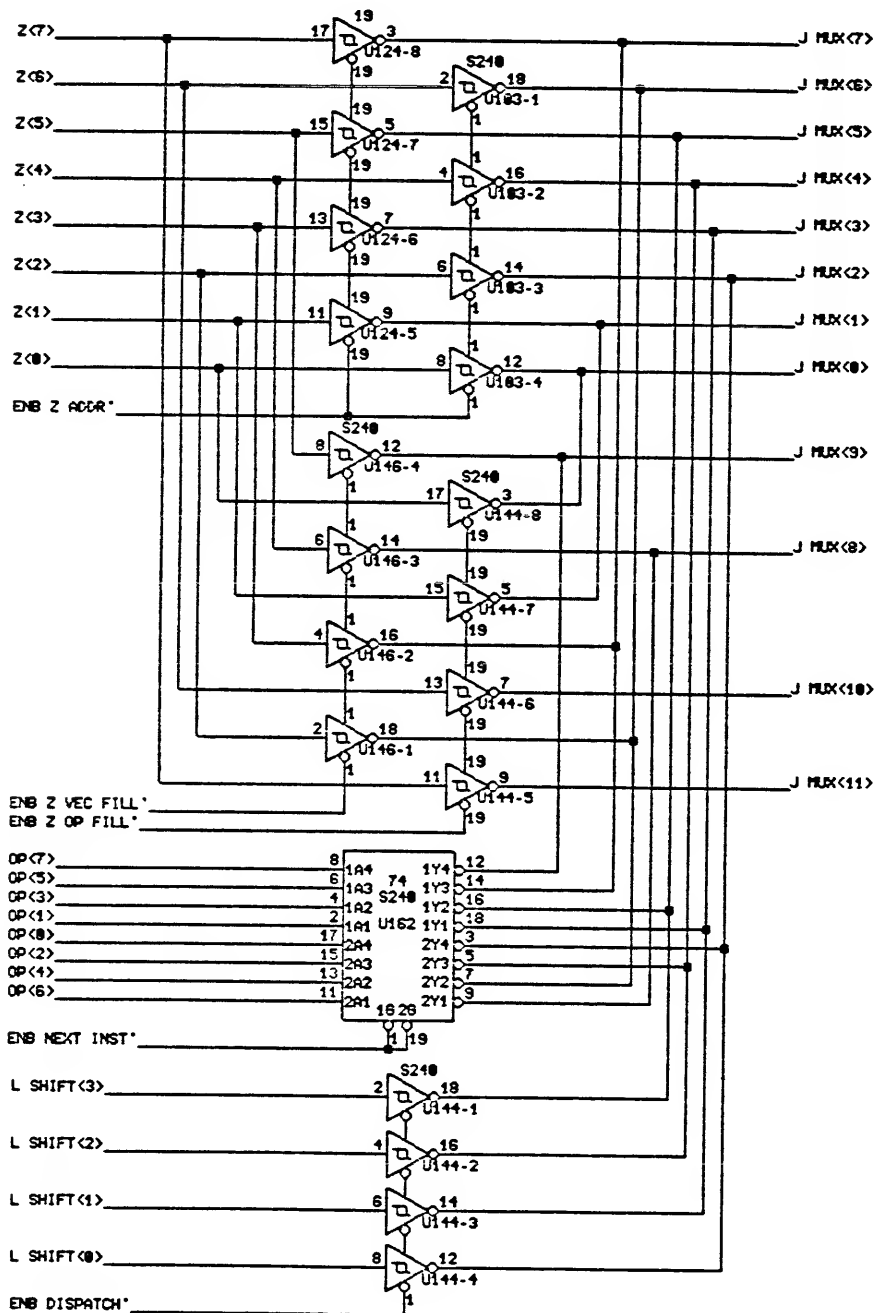
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DESIGNED	WCH	SIZE	CODE	IDENTIFICATION	VAR
DRAWN	13 Aug 82 12:13:04	SBckse	A	1 1	1 3 3 2 -
UPDATED	APR/82/84	STECK	PROJ :	C P U 1 6 K Version A	PAGE 19 OF 45

PERQ



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WRITTEN AUTHORIZATION OF PERQ SYSTEMS CORPORATION.

TITLE		CPU MEMSTATE MACHINE		a29.dp				
PERQ	DESIGNED	UCH		SIZE	CODE	IDENTIFICATION	VAR	REV
	DRAWN	13 Aug 82 12:10:04	SBokse	A	1 1	1 3 3 2 -	8 2	A
	UPDATED	APR/16/84	STECK	PROJ : C P U 1 6 K Version A			PAGE 28 OF 45	



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J MUX<11:0> SOURCES

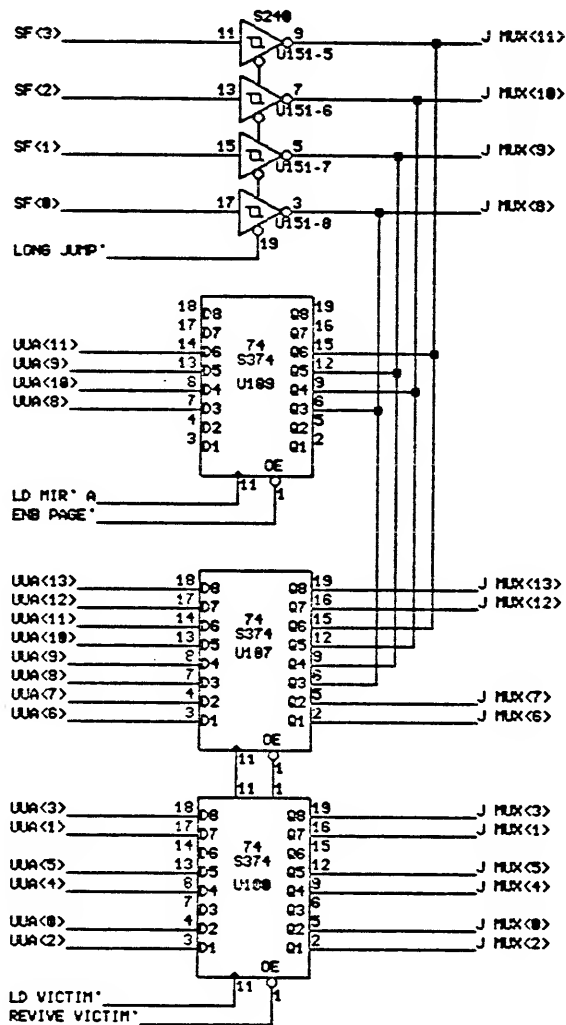
a21.db

**PERQ**

DESIGNED	UCH
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UPDATED	APR/02/84 STECK

SIZE	CODE	IDENTIFICATION
A	1 1	1 3 3 2 -
PROJ : C P U 1 6 K Version A		

VAR	REV
0 2	A
PAGE 21 OF 45	



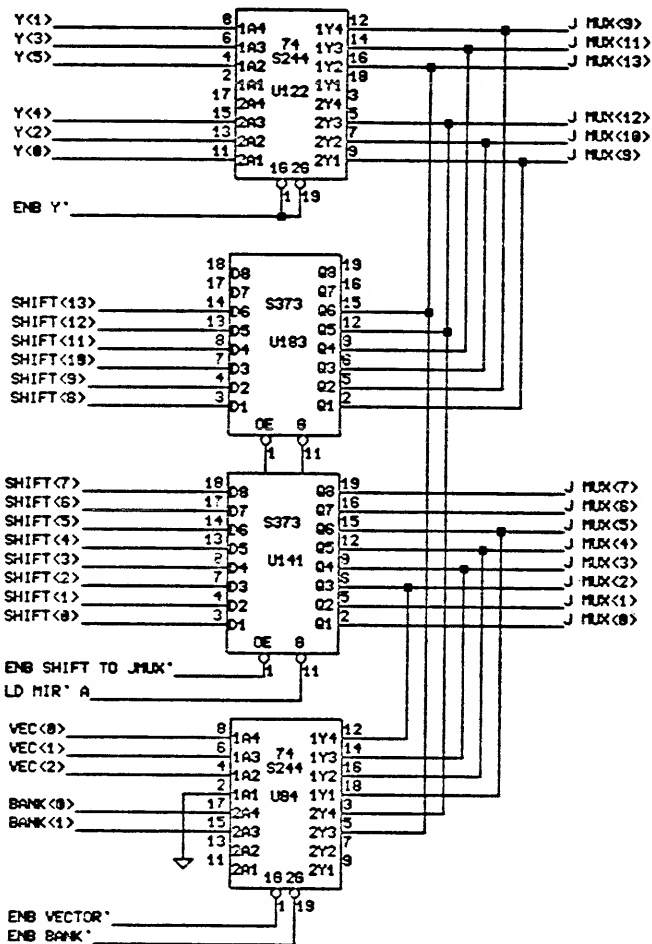
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TITLE				JMUX<13:8> SOURCES		COPYRIGHT (C) 1984 a22.db	
SIZE	CODE	IDENTIFICATION			VAR	REV	
A	1 1	1 3 3 2 -			0 2	A	
PROJ : CPU 16 K Version A					PAGE 22 OF 45		

PERQ





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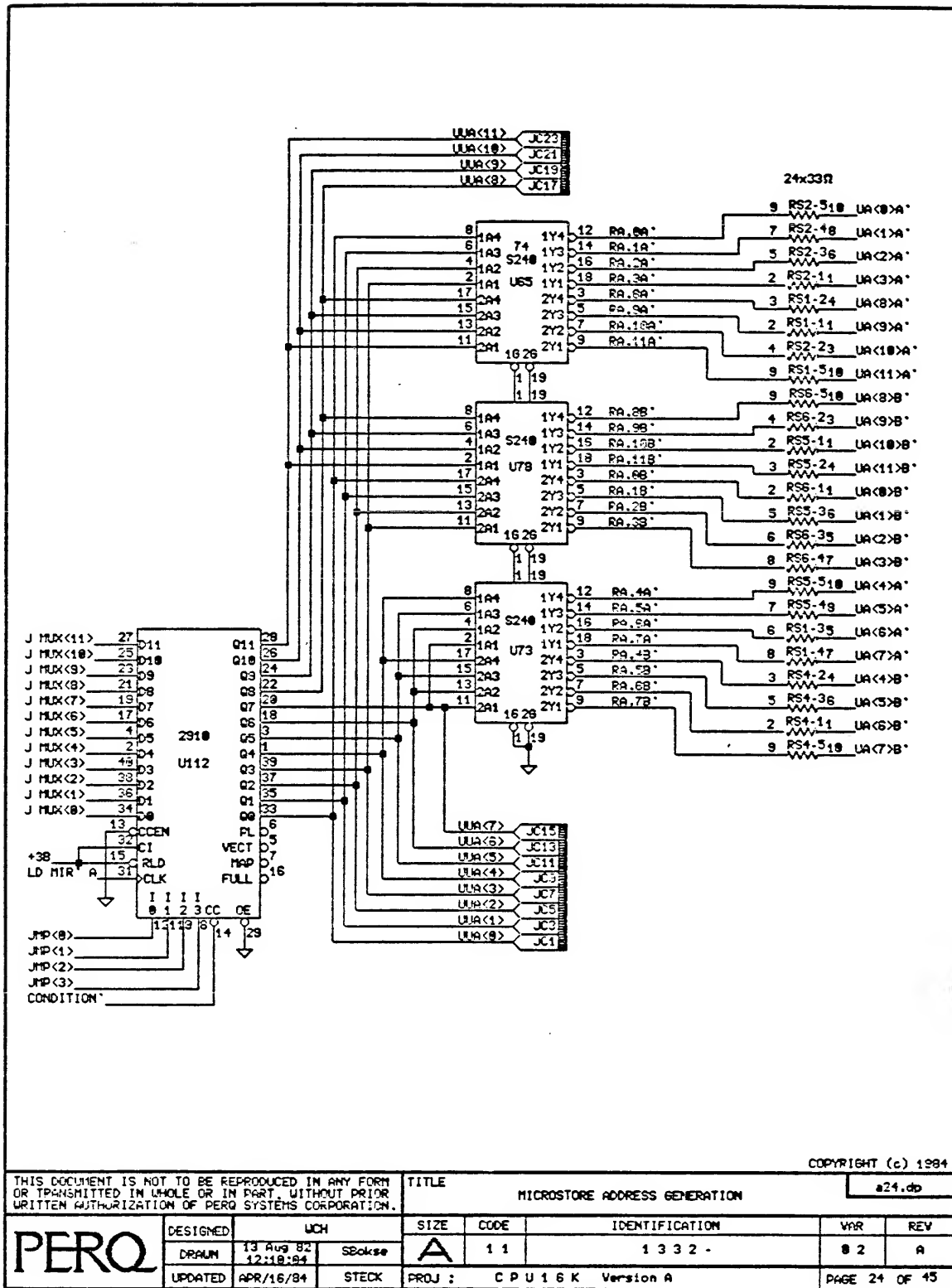
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JMUX<13:0> SOURCES

a23.db

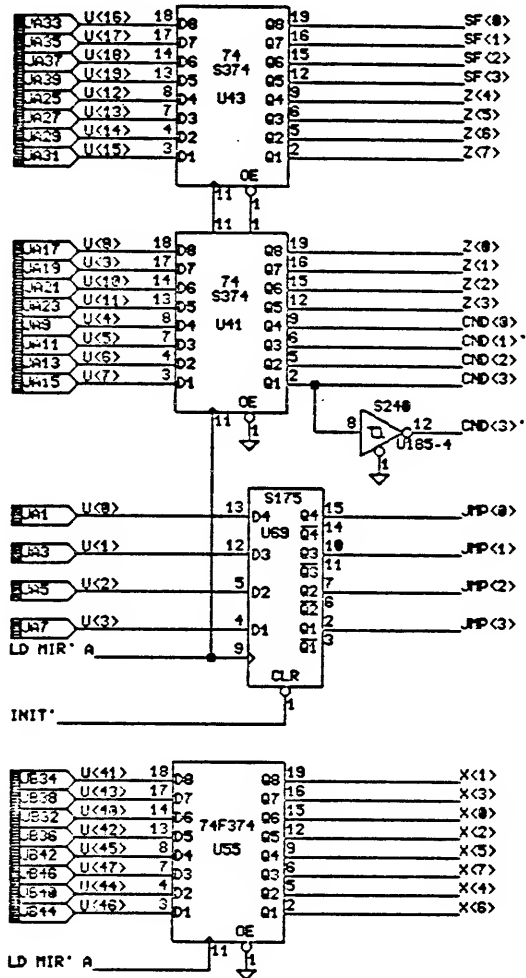
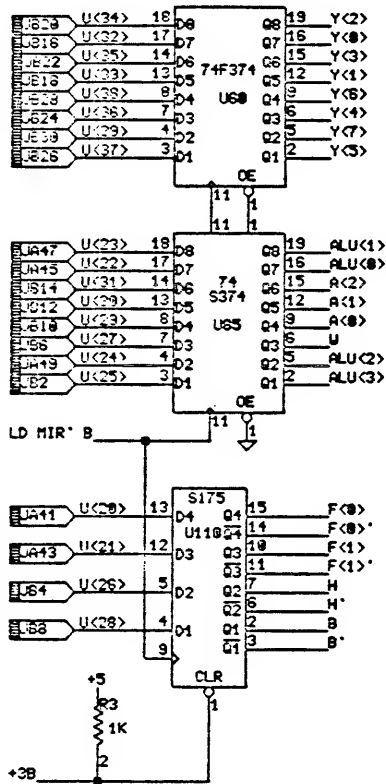
PERQ	DESIGNED	UCH	SIZE	CODE	IDENTIFICATION	VAR	REV
	DRAUN	13 Aug 82 12:19:84	SBokse	A	1 1	1 3 3 2 -	8 2
	UPDATED	APR/16/84	STECK	PROJ :	C P U 1 6 K Version A		A

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PERQ	DESIGNED	UCH		SIZE	CODE	IDENTIFICATION		VAR	REV	
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	UPDATED	APR/16/84	STECK	PROJ : C P U 1 6 K Version A					PAGE 24 OF 45	



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TITLE

MICROWORD PIPELINE

a25.dp

**PERQ**

DESIGNED WCH  
DRAWN 13 Aug 82 12:11U:04 SBokse  
UPDATED AFR/02/84 STECK

SIZE  
A

CODE  
1 1

IDENTIFICATION  
1 3 3 2 -

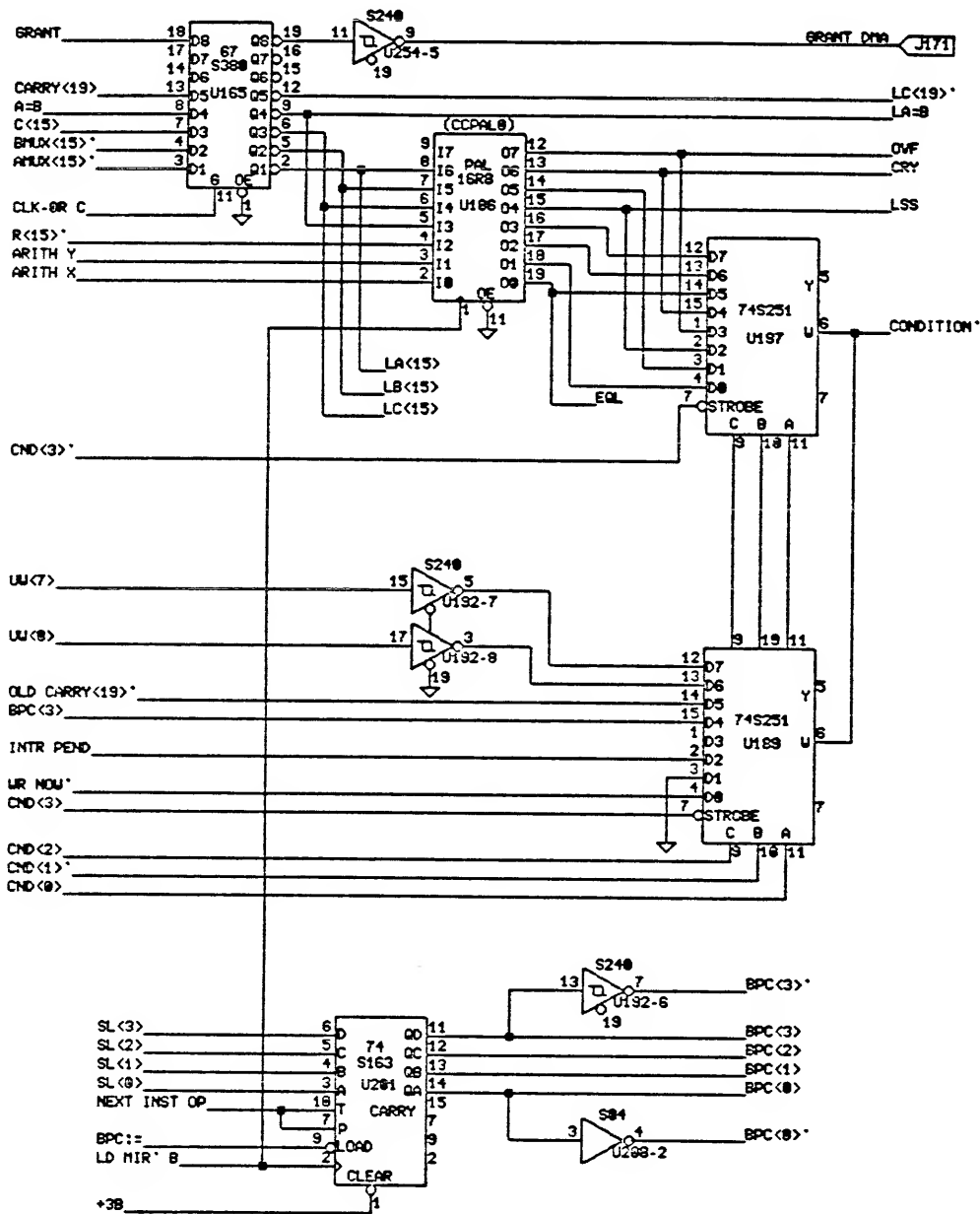
VAR  
0 2

REV  
A

PROJ : C P U 1 6 K Version A

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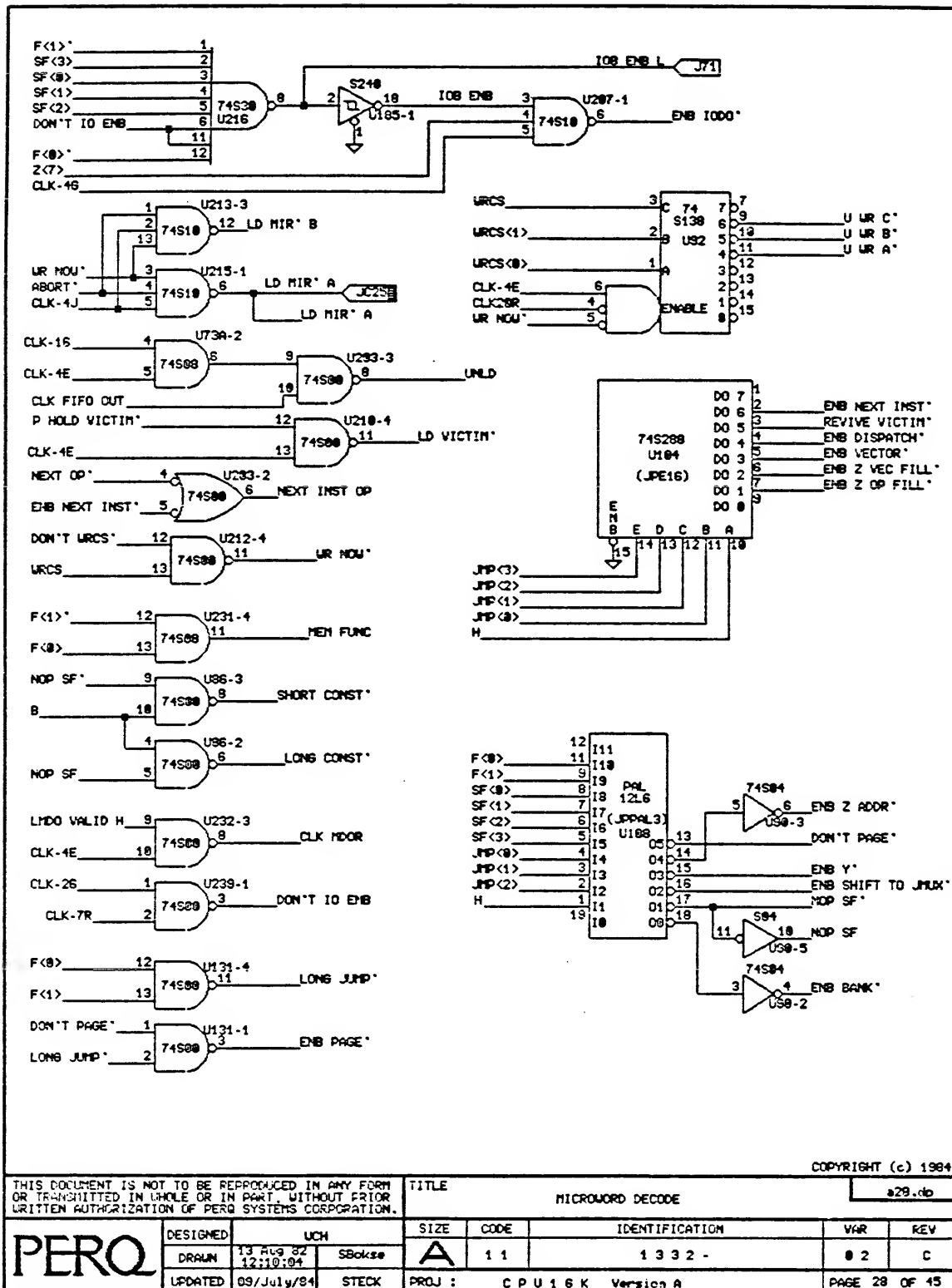


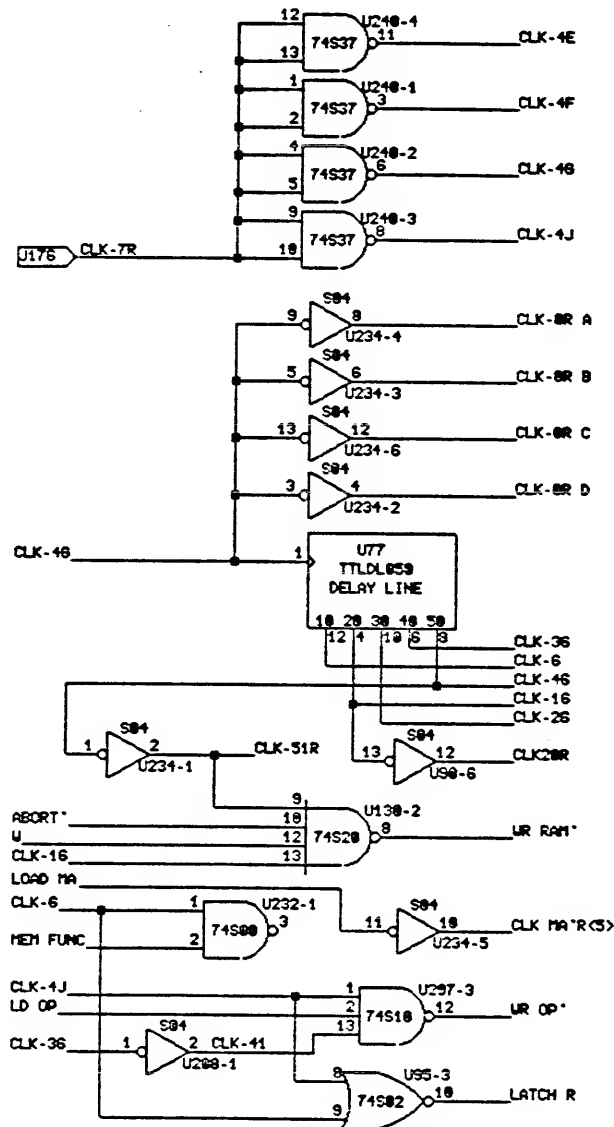


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TITLE  
CONDITION DECODE & BPC  
a27.db

DESIGNED	UCH	SIZE	CODE	IDENTIFICATION	VAR	REV
PERQ	13 Aug 82 12:19:04	SBokse	A	1 1	1 3 3 2 -	0 2 A
UPDATED	APR/02/84	STECK	PROJ :	CPU 1 6 K Version A	PAGE 27 OF 45	





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TITLE

CPU CLOCKS

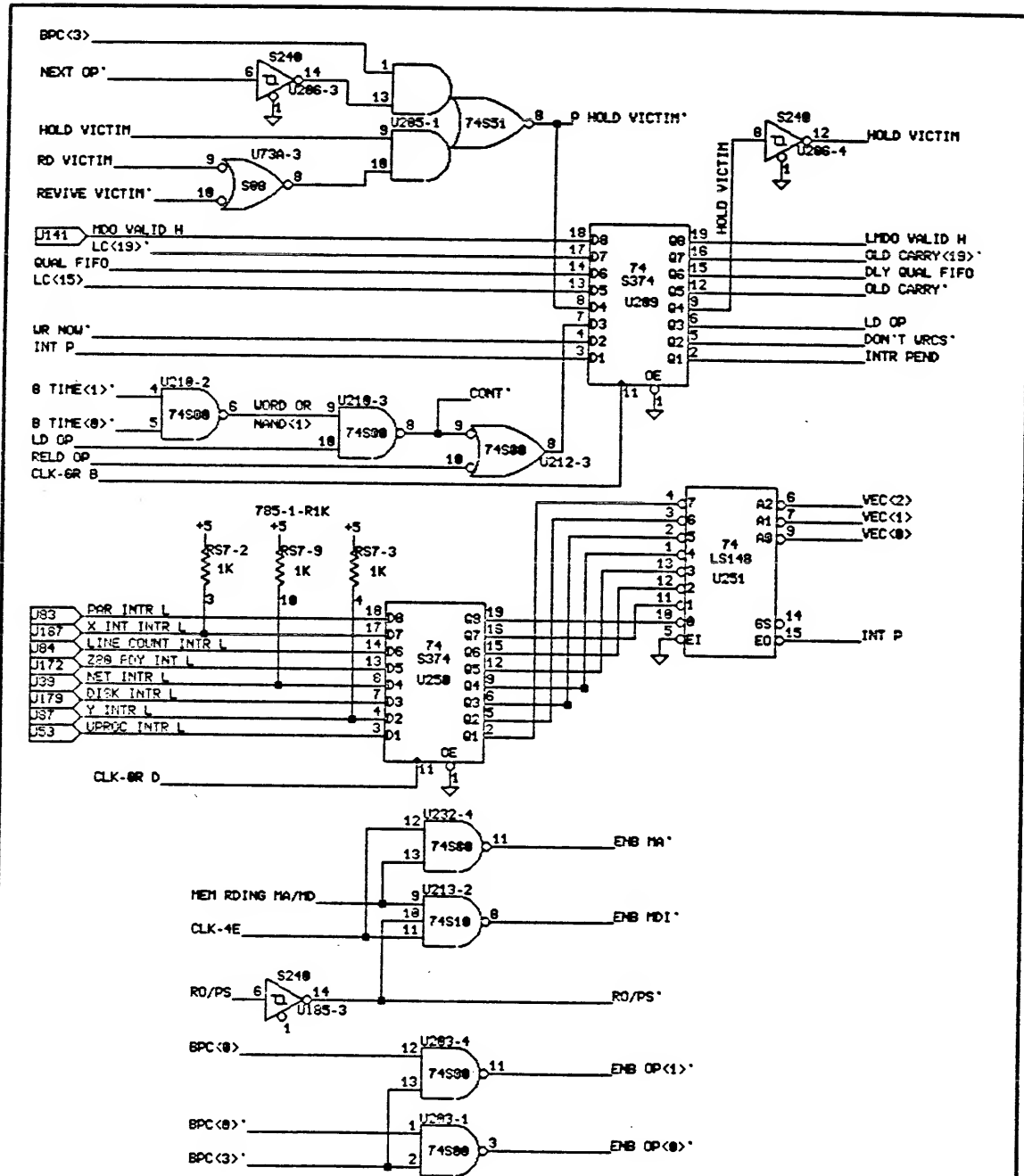
a29.db

PERQ

DESIGNED	UCH
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UPDATED	APR/82/84 STECK

SIZE	CODE	IDENTIFICATION
A	1 1	1 3 3 2 -
PROJ : C P U 1 6 K Version A		

VAR	REV
0 2	A
PAGE 29 OF 45	



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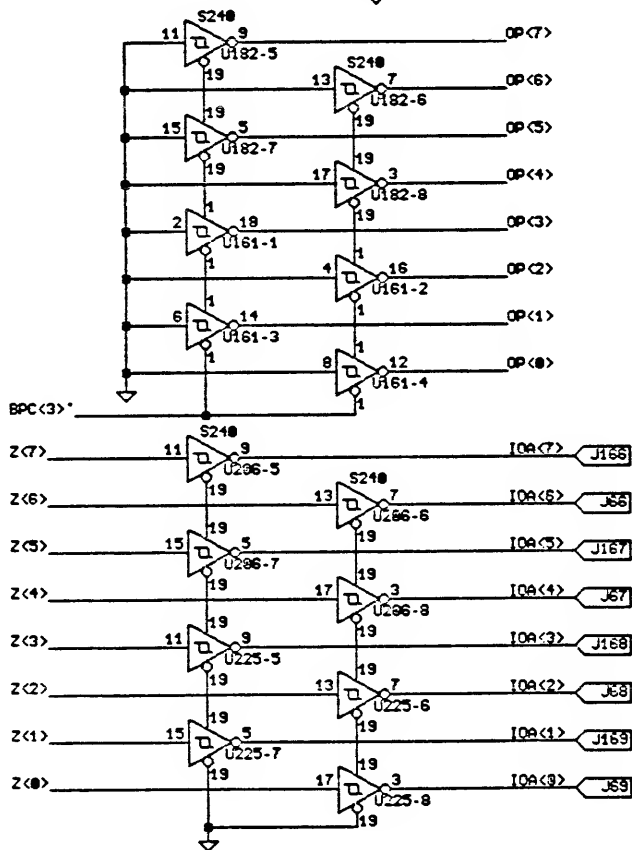
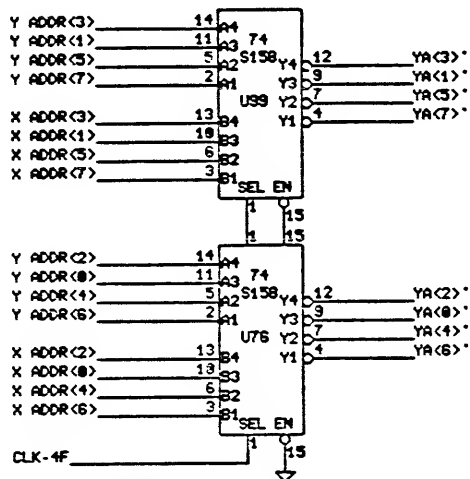
TITLE R/U DECODES & INTERRUPTS

a39.dp

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UPDATED	APR/02/84	STECK	PROJ :	C P U 16 K Version A		A

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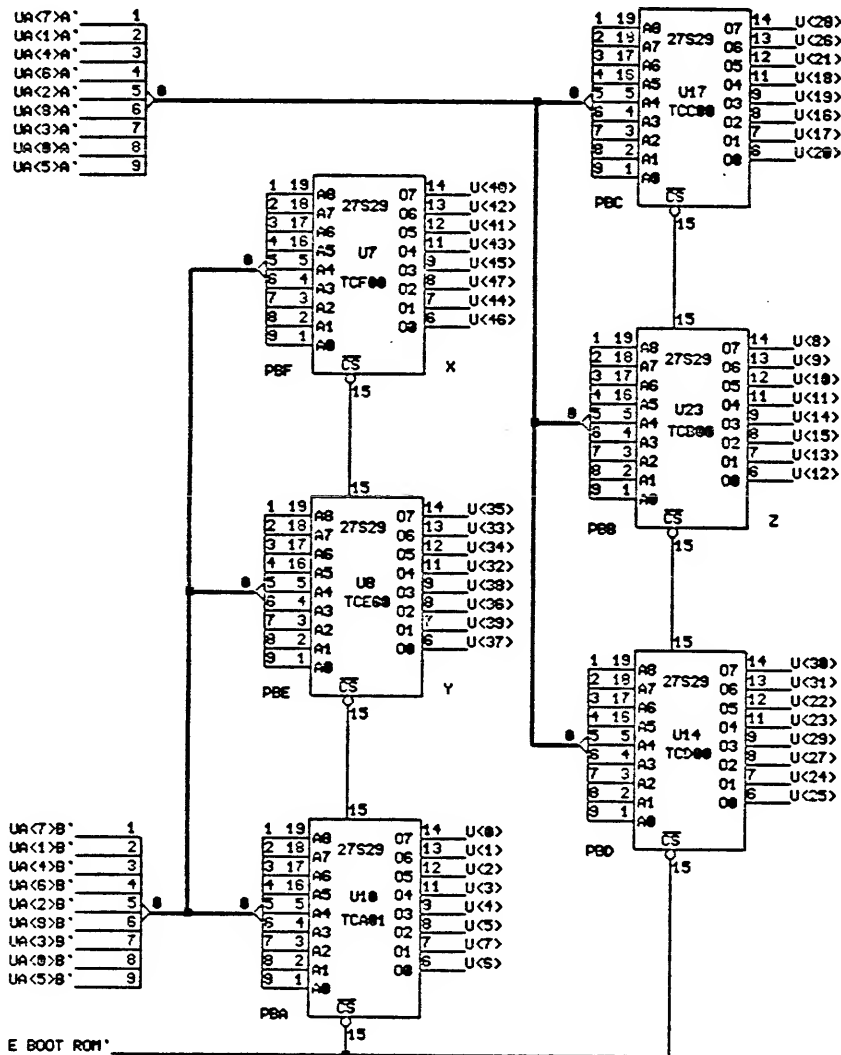
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TITLE Y ADDRESS MUX & IOA SOURCES

a31.db

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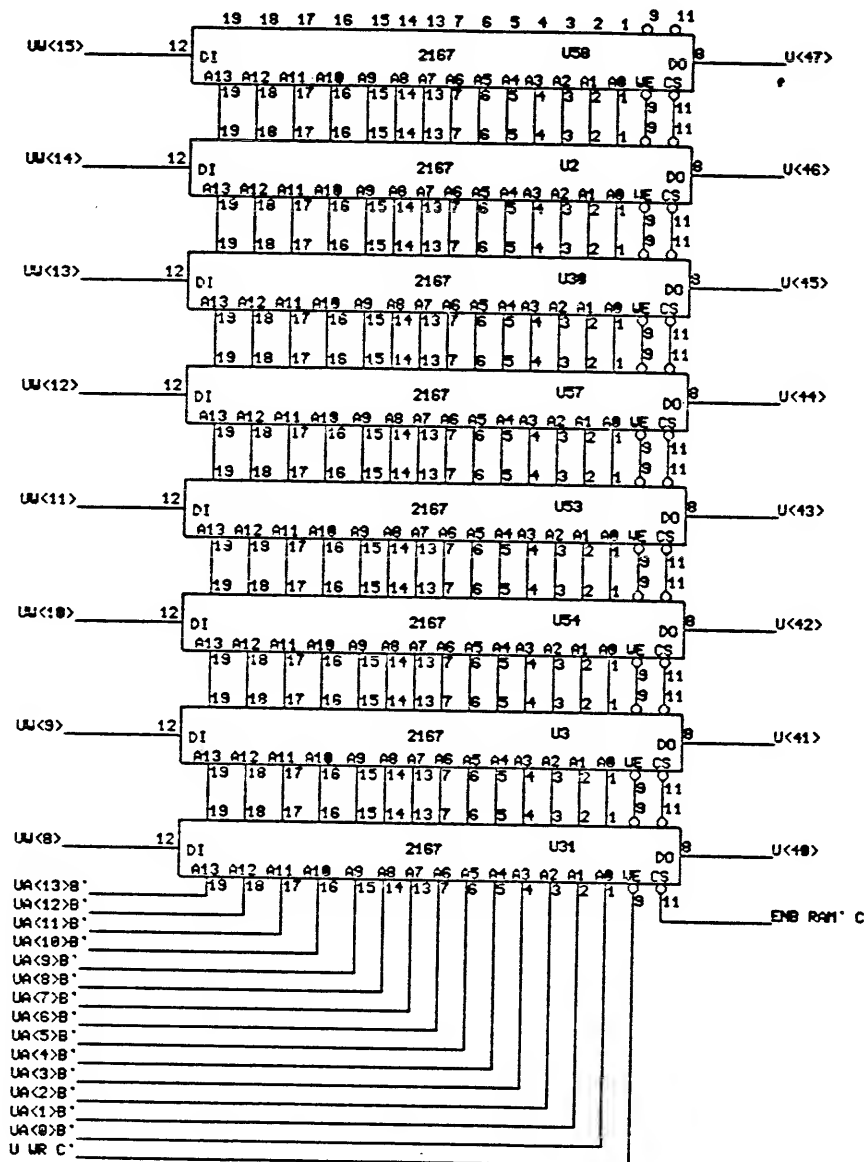
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TITLE  
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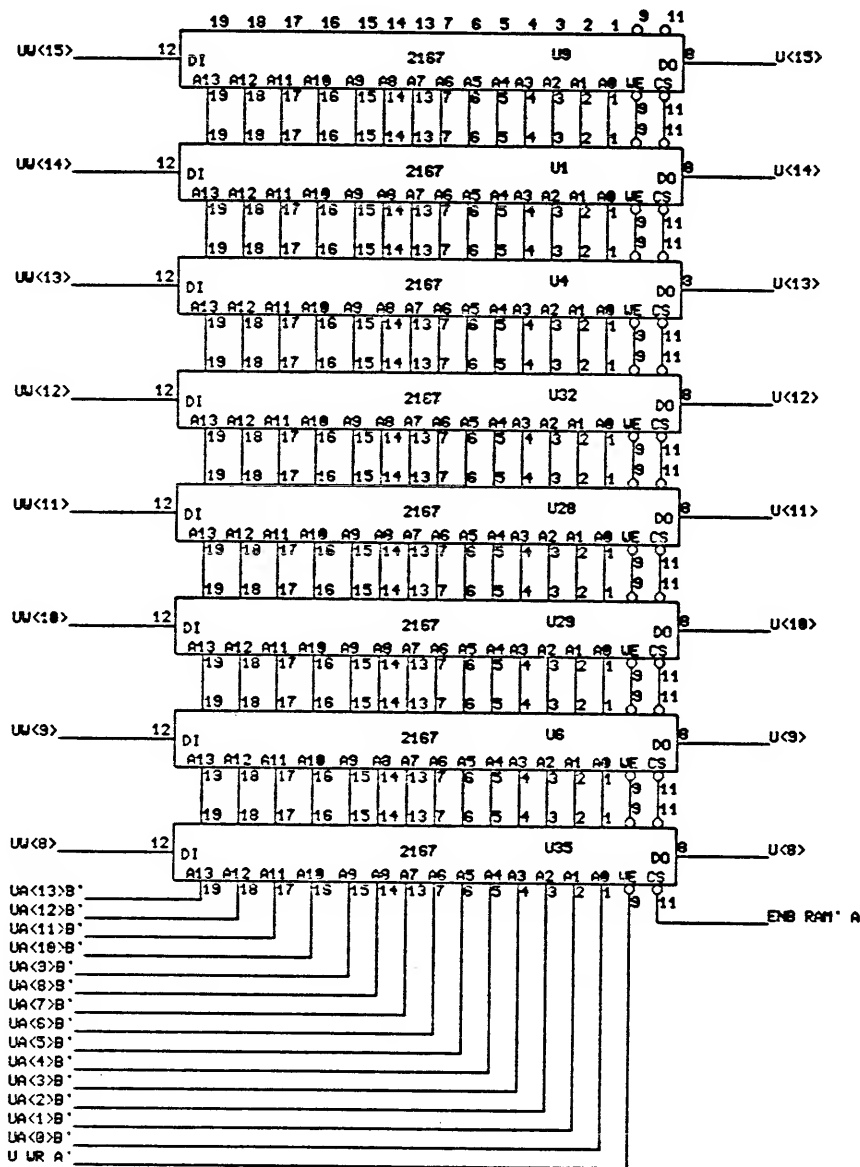
a32.db

PERQ

DESIGNED	UCH		SIZE	CODE	IDENTIFICATION	VAR	REV
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UPDATED	AUG/22/84	STECK	PROJ : C P U 1 6 K Version A				PAGE 32 OF 45



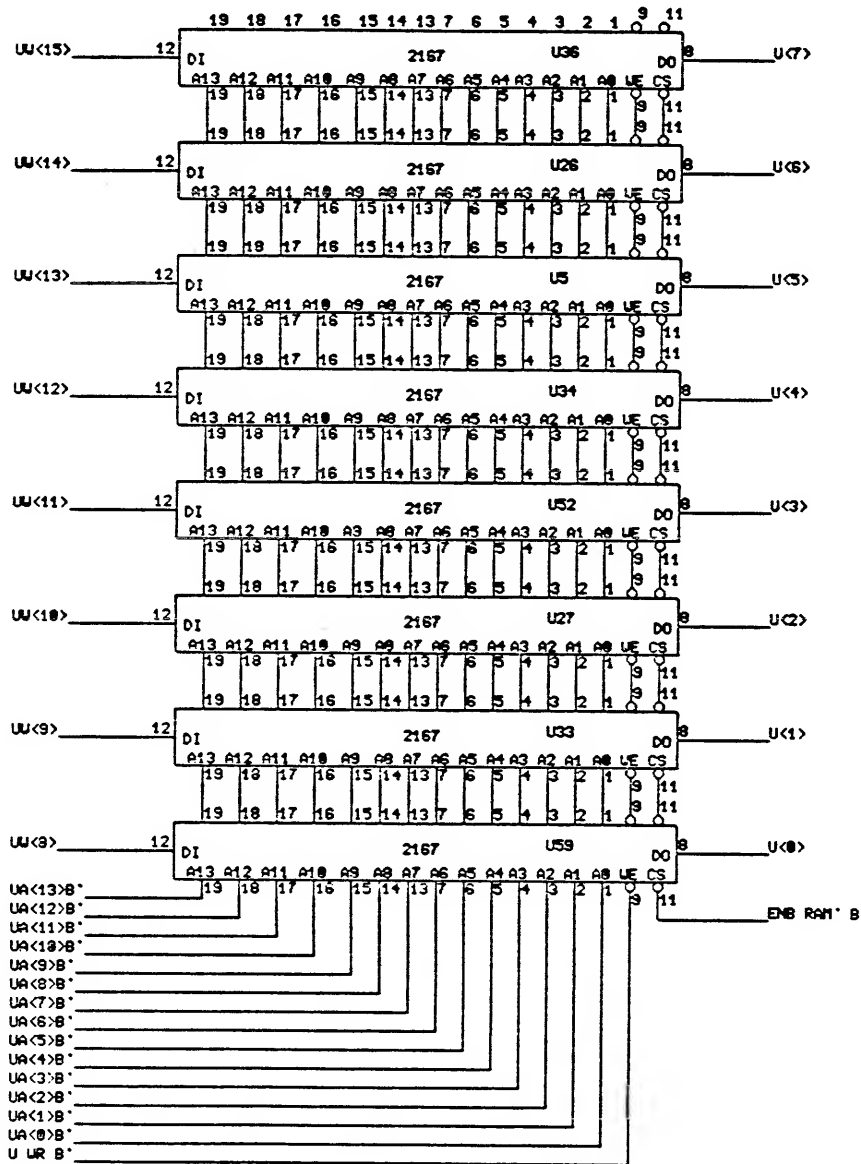
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PERQ		DESIGNED		TITLE		C X UCS ARRAY	
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UPDATED		STECK		CODE		IDENTIFICATION	
13 Aug 82		12:19:84		A		1 3 3 2 -	
APR/82/84				PROJ :		C P U 1 6 K Version A	
						PAGE 33 OF 15	



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DESIGNED		UCH		SIZE	CODE	IDENTIFICATION	VAR	REV
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UPDATED		APR/92/84	STECK	PROJ : C P U 1 6 K Version A				PAGE 34 OF 45



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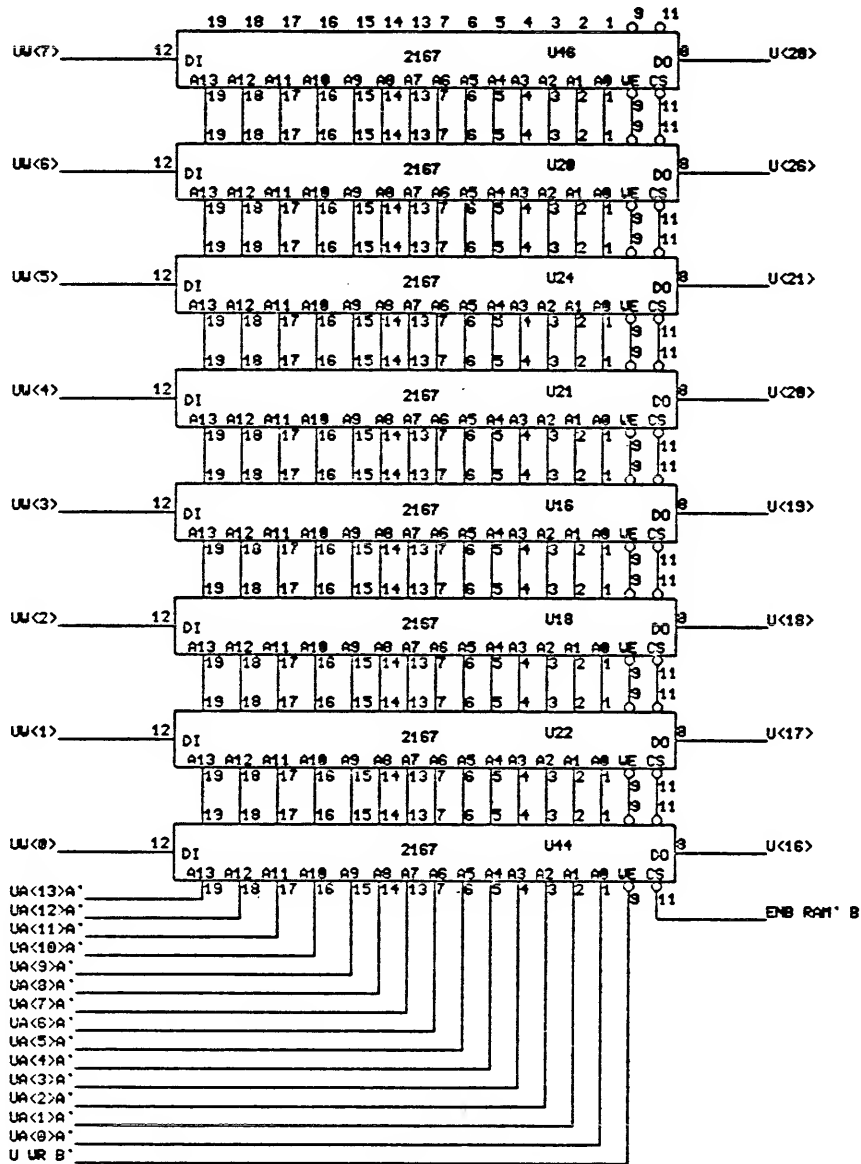
TITLE

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X

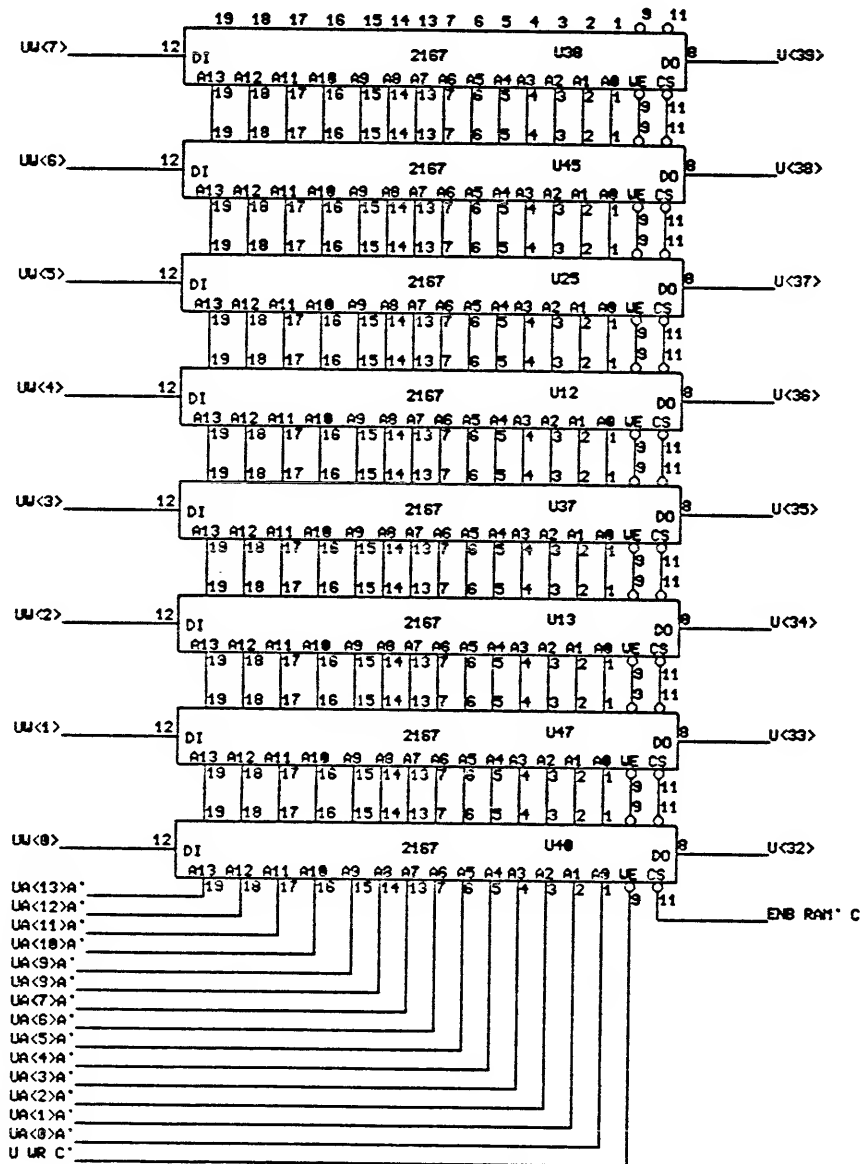
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a35.db

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PERQ	DESIGNED	UCH		SIZE	CODE	IDENTIFICATION		VAR	REV
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	UPDATED	APR/22/84	STECK	PROJ : C P U 1 6 K Version A				PAGE 36 OF 45	



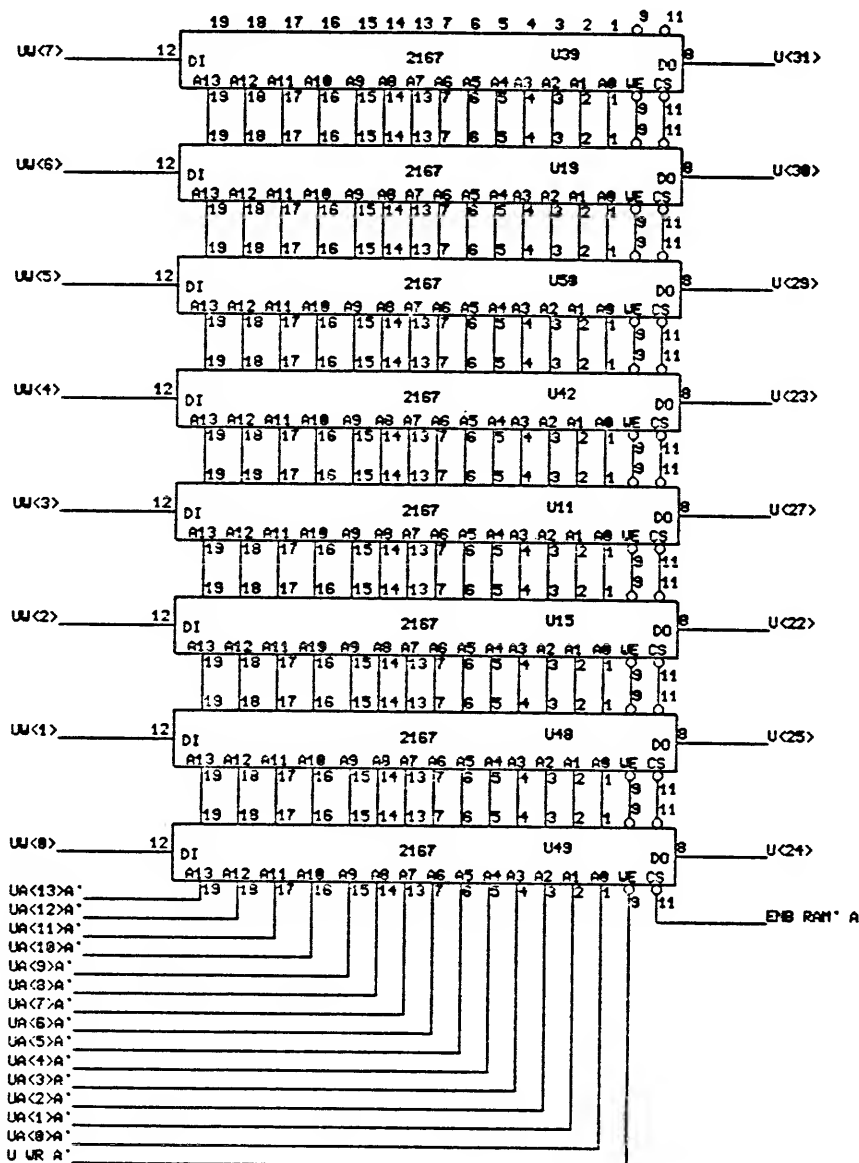
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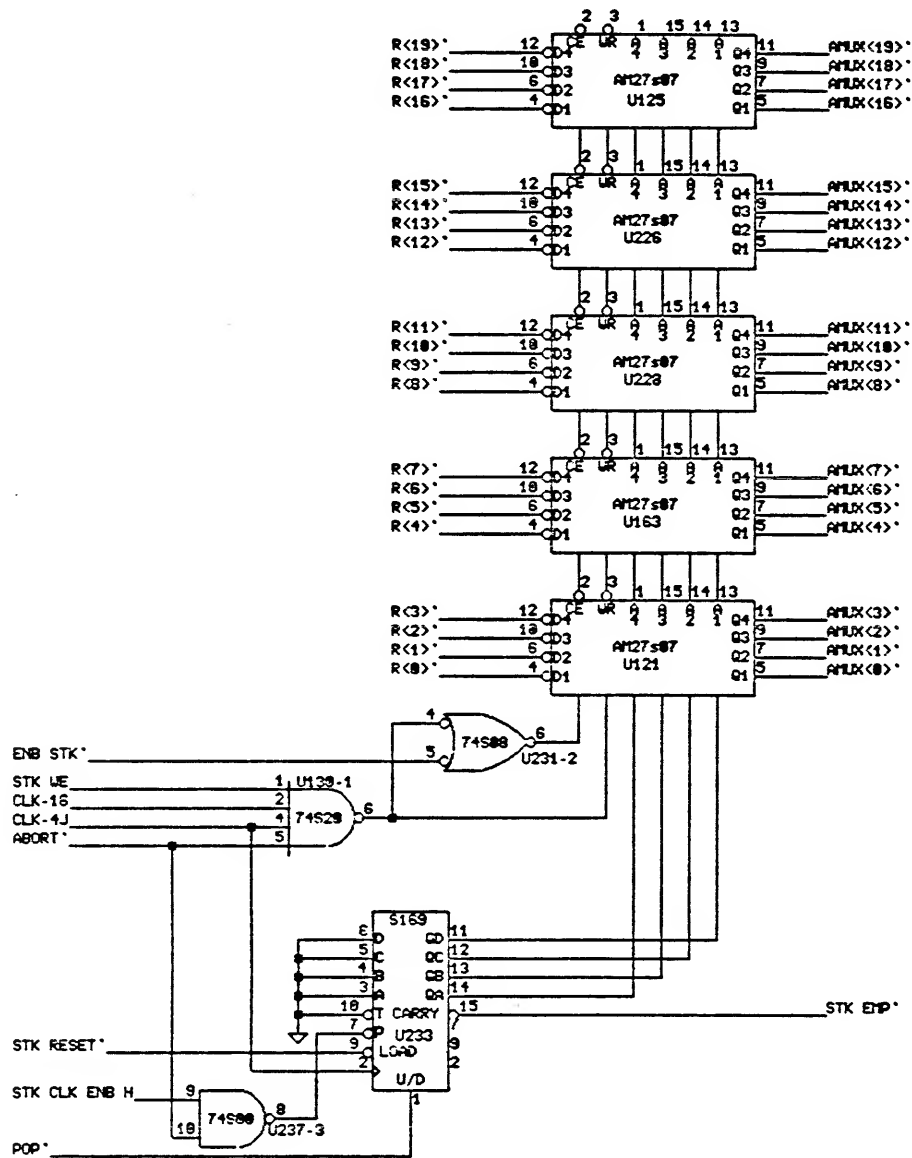
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UPDATED	APR/82/84	STECK	PROJ :	C P U 1 6 K Version A		A

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	UPDATED	APR/02/84	STECK	PROJ : C P U 1 6 K Version A				PAGE 38 OF 45	



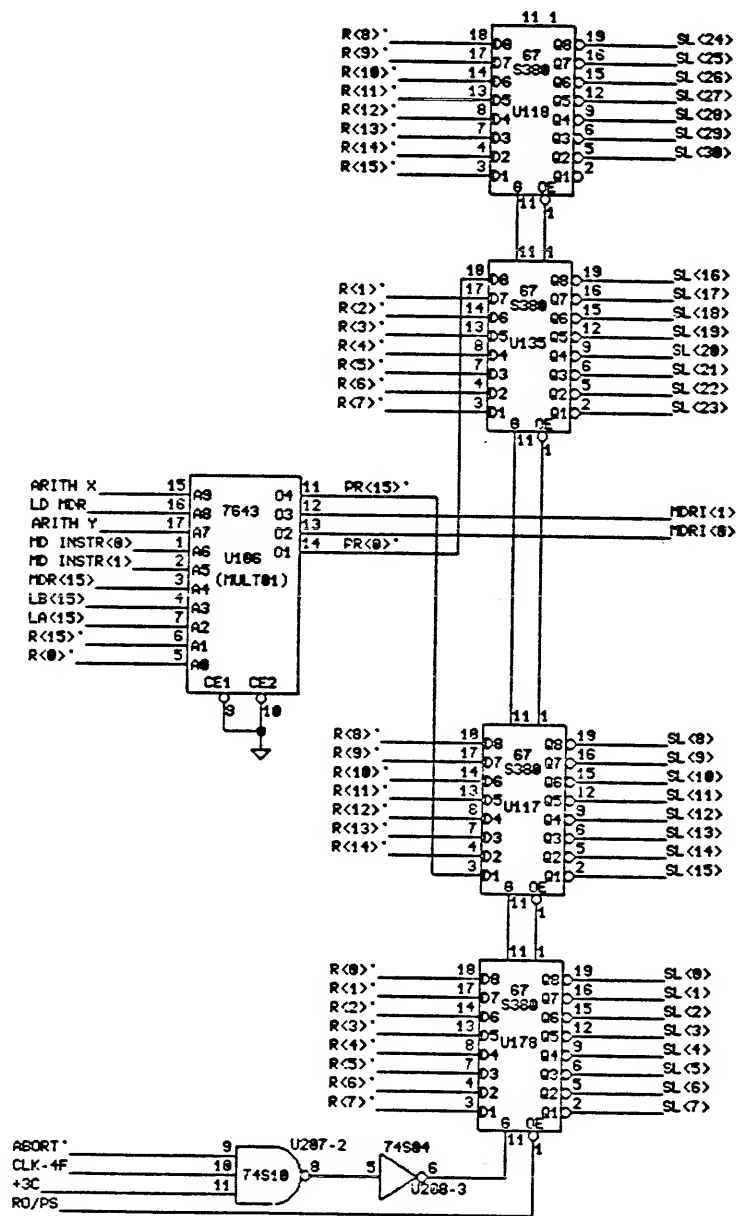


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TITLE  
ALU STACK  
a39.db

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	UPDATED	APR/82/84	STECK	PROJ :	C P U 1 6 K	Version A	PAGE 39 OF 45



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TITLE

SHIFTER SOURCE

a48.db

PERQ

DESIGNED

UCH

SIZE

CODE

IDENTIFICATION

VAR

REV

DRAWN

13 Aug 82  
12:10:84

SBokse

A

1 1

1 3 3 2 -

0 2

A

UPDATED

APR/16/84

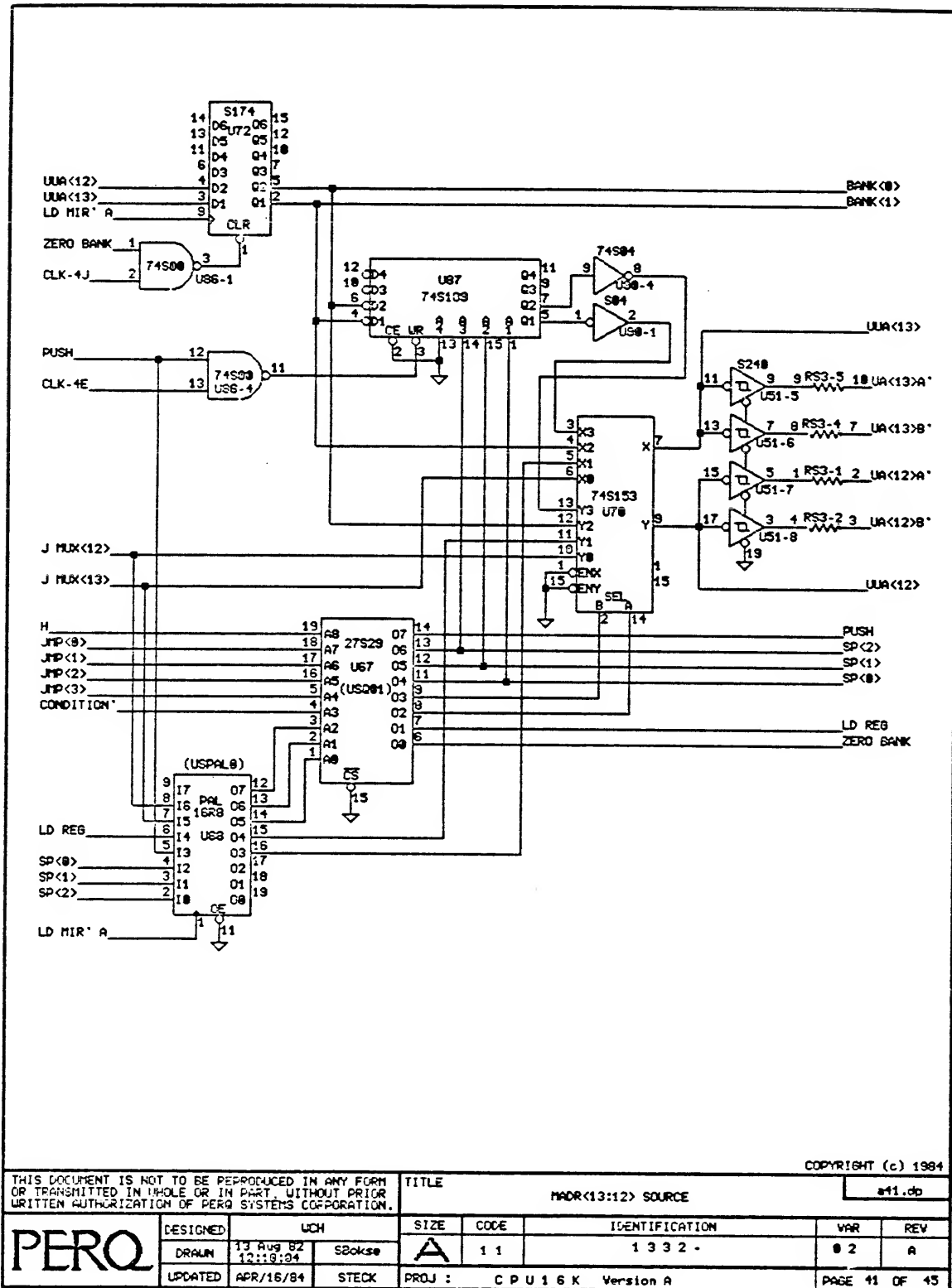
STECK

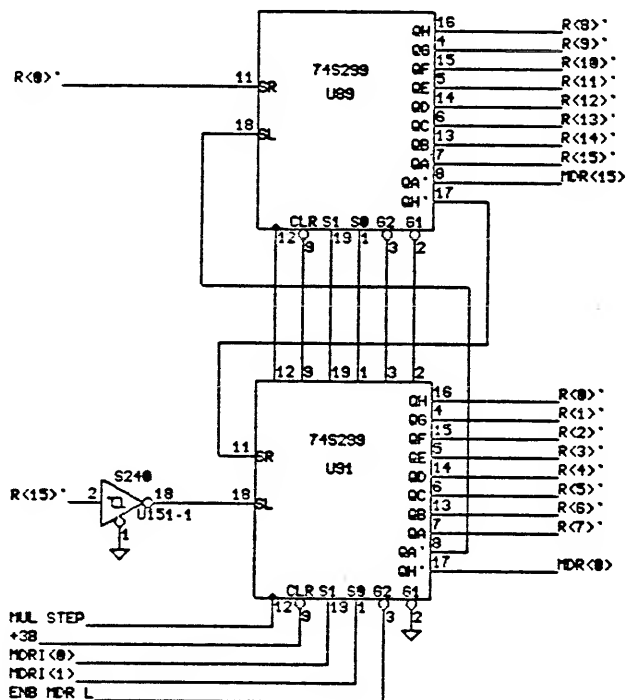
PROJ :

C P U 1 6 K

Version A

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TITLE

MULTIPLIER REGISTER

a42.db

**PERQ**

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UPDATED	APR/82/84

SBokse

SIZE

CODE

IDENTIFICATION

VAR

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1 1

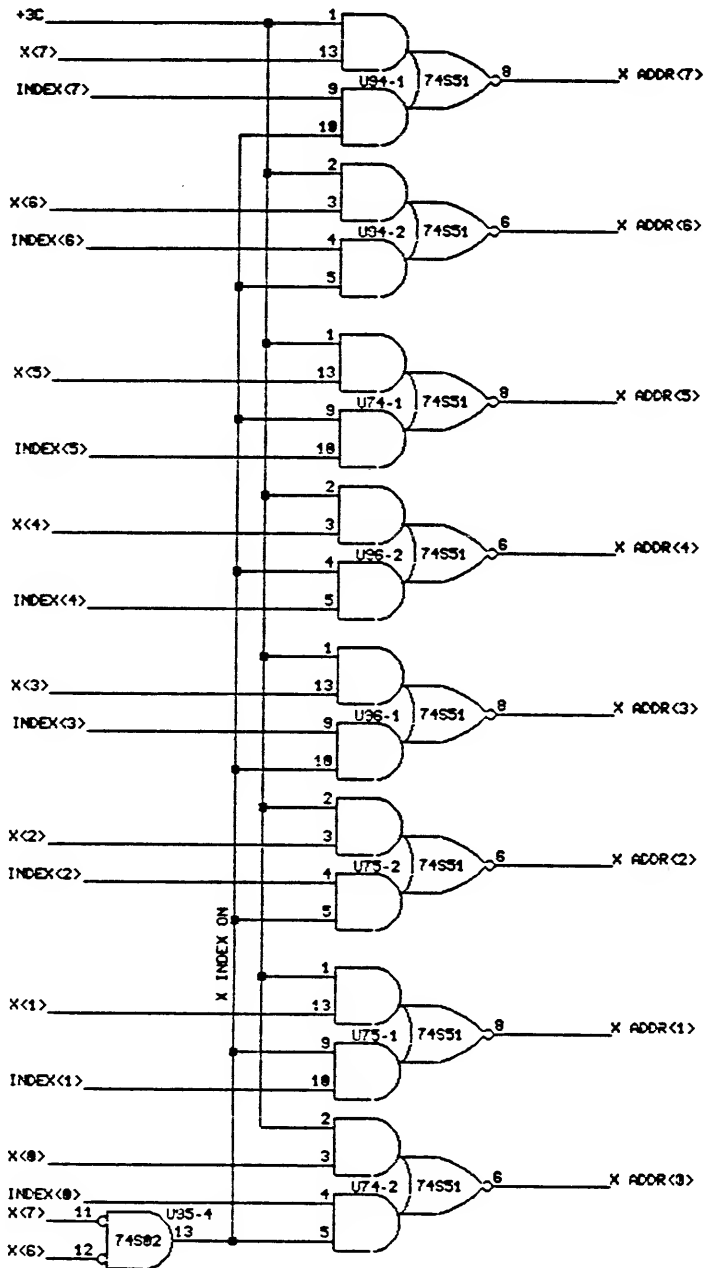
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PROJ : C P U 1 6 K Version A

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TITLE

X INDEX DECODE

a43.db

**PERQ**

DESIGNED

UCH

SIZE

CODE

IDENTIFICATION

VAR

REV

DRAWN

13 Aug 82

SBokse

A

1 1

1 3 3 2 -

0 2

A

UPDATED

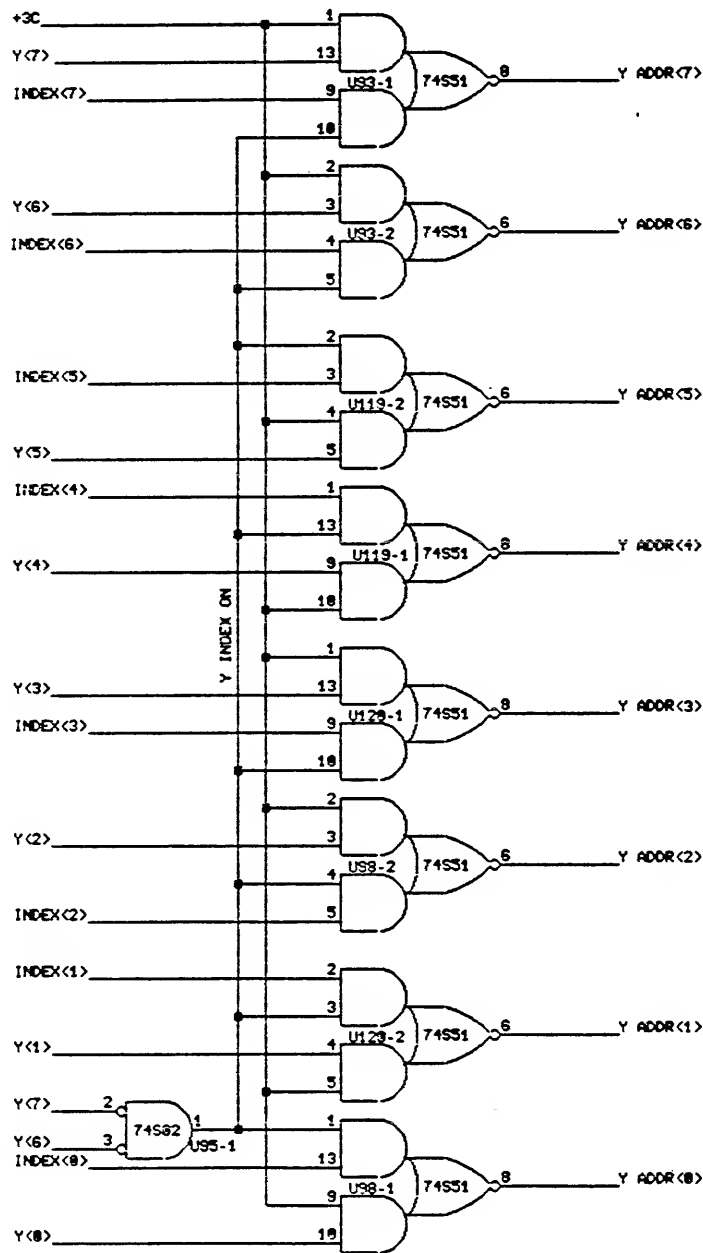
APR/02/94

STECK

PROJ :

CPU 16K Version A

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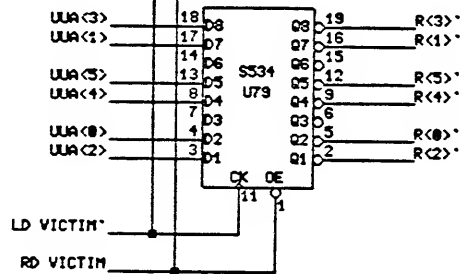
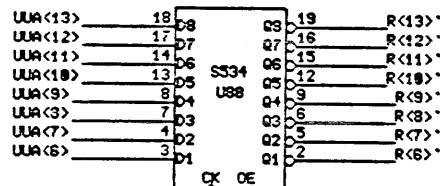
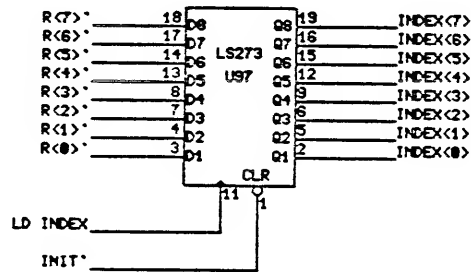
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TITLE  
Y INDEX DECODE

a44.db

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LOW BYTE OF RESULT



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TITLE

INDEX REGISTER AND VICTIM LATCH

a15.db

**PERQ**

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UPDATED	APR/16/84 STECK

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IDENTIFICATION

1 3 3 2 -

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REV

A

PROJ : C P U 1 6 K Version A

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R<9>`.....45 42 40 39 9 7 3
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REVIVE VICTIM`.....30 28 22
RO DATA RDY.....18 15
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RO/PS`.....30 19 12
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ROP FN<1>`.....16 15
ROP FN<2>`.....16 15
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SHIFT CNTL<2>.....	19	13		
SHIFT CNTL<3>.....	19	13		
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STK RESET`.....	39	26
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U WR B`.....	36	35 28
U WR C`.....	37	33 28
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WID WRD<1>'.....	18	16							
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WR OP'.....	29	3	1						
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WRCS<1>.....	28	26							
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X ADDR<7>.....	43	31	5	3	1				
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a08.WL  
a07.WL  
a06.WL  
a05.WL  
a04.WL  
a03.WL  
a02.WL  
a01.WL

Number Of Nets = 948  
Begin Wirelist



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1: U139-11 U82-19 U111-19 U244-1 U253-2
1: U253-4 U253-8 U253-6 U253-15 U253-17
1: U253-13 U253-11 U254-2 U254-4 U254-8
1: U146-13 U146-11 U146-15 U146-17 U113-19
1: U61-19 U62-19 U64-19 U63-19 U103-17
1: U103-15 U103-11 U103-13 U102-17 U102-15
1: U102-4 U102-6 U102-13 U102-11 U102-8
1: U102-2 U83-19 U143-1 U71-1 U56-1
1: U157-9 U134-13 U155-13 U176-13 U196-13
1: U114-13 U175-13 U115-13 U195-13 U194-13
1: U218-13 U217-13 U221-1 U219-1 U220-8
1: U241-8 U222-8 U223-8 U197-10 U242-10
1: U198-10 U199-10 U197-8 U242-8 U198-8
1: U199-8 U220-10 U241-10 U222-10 U223-10
1: U192-1 U254-19 U238-1 C160-2 U172-14
1: U172-13 U169-10 U169-8 U171-15 U171-16
1: U170-1 U166-19 U129-15 U174-21 U179-15
1: U180-15 U129-19 U214-15 U173-21 U173-20
1: U204-10 U204-8 U84-2 U112-29 U73-1
1: U78-1 U65-1 U112-13 U73-19 U78-19
1: U65-19 U60-1 U85-1 U41-1 U43-1 U55-1
1: U105-15 U229-5 U229-4 U149-4 U193-15
1: U150-15 U150-18 U188-15 U150-17 U150-16
1: U193-18 U193-17 U193-16 U186-11 U189-3
1: U165-1 U192-19 U104-15 U185-1 U251-5
1: U206-1 U209-1 U250-1 U99-15 U76-15
1: U182-11 U161-8 U161-6 U161-4 U161-2
1: U182-17 U182-15 U182-13 U225-19 U206-19
1: U233-6 U233-5 U233-4 U233-3 U233-10
1: U106-10 U106-8 U51-19 U68-11 U87-13
1: U87-2 U67-15 U70-15 U70-1 U89-2 U91-2
1: U151-1 .!GND

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3: U232-6 J154-1 .%J154-1

4: R7-1 J197-1 R6-2 .%R6-2

5: C160-1 U238-2 R7-2 .%R7-2

6: U65-5 RS1-2 .%RS1-2

7: U65-3 RS1-3 .%RS1-3

8: U73-18 RS1-8 .%RS1-8

9: U65-9 RS1-9 .%RS1-9

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28: U90-3 U108-18	.%U108-18
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35:	.%U118-11

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47: U126-4 U128-5 U127-5 U129-2 .%U129-2

48: U126-7 U128-6 U127-6 U129-3 .%U129-3

49: U126-8 U128-9 U127-9 U129-4 .%U129-4

50: U126-13 U128-12 U127-12 U129-5 .%U129-5

51: U148-3 U129-6 .%U129-6

52: U148-4 U129-7 .%U129-7

53: U148-7 U129-8 .%U129-8

54: U148-8 U129-9 .%U129-9

55: U150-7 U131-4 .%U131-4

56: U236-9 U131-9 .%U131-9

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64: U149-3 U150-12	.%U150-12
65: U91-18 U151-18	.%U151-18
66: U156-3 U177-8 U157-12	.%U157-12
67: U156-14 U177-17 U157-13	.%U157-13
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127: U204-16 U173-23 U227-16	.%U227-16
128: U173-16 U227-17	.%U227-17
129: U173-17 U227-18	.%U227-18
130: U204-15 U173-22 U227-19	.%U227-19
131: U237-2 U227-2	.%U227-2
132: U214-3 U227-5	.%U227-5
133: U205-6 U231-1	.%U231-1
134: U237-8 U233-7	.%U233-7
135: U213-6 U191-1 U235-1	.%U235-1
136: U237-11 U236-11	.%U236-11

137: C159-1 U238-14	.%U238-14
138: U243-14 U241-13	.%U241-13
139: U243-4 U241-14	.%U241-14
140: U243-8 U242-13	.%U242-13
141: U243-18 U242-14	.%U242-14
142: U237-6 U260-1 U243-1	.%U243-1
143: U197-13 U243-13	.%U243-13
144: U197-14 U243-17	.%U243-17
145: U220-14 U243-7	.%U243-7
146: U251-10 U250-19	.%U250-19
147: U251-2 U250-6	.%U250-6
148: U251-1 U250-9	.%U250-9
149: U250-16 U251-11	.%U251-11
150: U250-15 U251-12	.%U251-12
151: U250-12 U251-13	.%U251-13
152: U250-5 U251-3	.%U251-3
153: U250-2 U251-4	.%U251-4
154: U165-19 U254-11	.%U254-11
155: U66-1 U254-5	.%U254-5
156: U199-13 U260-13	.%U260-13
157: U222-13 U260-14	.%U260-14
158: U199-14 U260-17	.%U260-17
159: U198-14 U260-18	.%U260-18
160: U223-13 U260-3	.%U260-3
161: U222-14 U260-4	.%U260-4
162: U223-14 U260-7	.%U260-7

163: U198-13 U260-8	.%U260-8
164: RS3-4 U51-3	.%U51-3
165: RS3-1 U51-5	.%U51-5
166: RS3-8 U51-7	.%U51-7
167: RS3-9 U51-9	.%U51-9
168: U131-8 U254-15 U66-5 U66-10 U66-12	
168:	.%U66-12
169: U67-3 U68-12	.%U68-12
170: U67-2 U68-13	.%U68-13
171: U67-1 U68-14	.%U68-14
172: U70-11 U68-15	.%U68-15
173: U70-5 U68-16	.%U68-16
174: U67-8 U70-14	.%U70-14
175: U67-9 U70-2	.%U70-2
176: U90-2 U70-3	.%U70-3
177: U86-3 U72-1	.%U72-1
178: RS5-9 U73-12	.%U73-12
179: RS1-6 U73-16	.%U73-16
180: U95-13 U74-5 U94-10 U94-5 U74-9 U96-4	
180: U96-10 U75-5 U75-9	.%U75-9
181: RS6-4 U78-14	.%U78-14
182: RS5-3 U78-18	.%U78-18
183: U86-11 U87-3	.%U87-3
184: U90-9 U87-7	.%U87-7
185: U91-8 U89-18	.%U89-18
186: U87-5 U90-1	.%U90-1
187: U70-13 U90-8	.%U90-8



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189: U131-6 U95-6 .%U95-6  
190: U120-3 U95-1 U98-1 U93-10 U93-5 U119-2  
190: U119-13 U120-10 U98-4 .%U98-4  
191: U80-17 U81-17 U82-17 U111-17 U113-17  
191: U61-17 U62-17 U64-17 U63-17 R1-2  
191: U83-17 U147-13 U147-10 U174-18 U174-19  
191: .+3A  
192: U238-3 U236-10 U236-12 U173-18 U173-19  
192: U112-32 U112-15 U110-1 R3-2 U229-6  
192: U201-1 U89-9 U91-9 .+3B  
193: U213-5 R5-2 U236-1 U236-4 U207-11  
193: U94-1 U74-2 U75-1 U75-2 U96-1 U96-2  
193: U74-1 U94-2 U119-4 U93-1 U98-9 U98-2  
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197: U165-8 .A=B  
198: U231-3 U213-1 U215-4 U130-10 U130-5  
198: U237-10 U207-9 .ABORT`  
199: U153-8 U154-8 U152-8 U132-8 U133-8  
199: U105-6 .ALU M  
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202: .ALU Y<11>`  
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205: U153-11 U259-4 U257-4 U249-4 .ALU Y<14>`

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 208: U143-7 U154-10 U256-8 .ALU Y<17>`  
 209: U143-4 U154-11 U256-13 .ALU Y<18>`  
 210: U143-3 U154-13 U256-17 .ALU Y<19>`  
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 212: U191-7 U133-11 U258-7 U255-7 U246-7  
 212: U128-14 .ALU Y<2>`  
 213: U191-8 U133-13 U258-3 U255-3 U246-3  
 213: U128-13 .ALU Y<3>`  
 214: U191-18 U132-9 U258-18 U255-18 U246-18  
 214: U128-8 .ALU Y<4>`  
 215: U191-14 U132-10 U258-8 U255-8 U246-8  
 215: U128-7 .ALU Y<5>`  
 216: U191-13 U132-11 U258-4 U255-4 U246-4  
 216: U128-4 .ALU Y<6>`  
 217: U191-17 U132-13 U258-14 U255-14 U246-14  
 217: U128-3 .ALU Y<7>`  
 218: U235-3 U152-9 U259-17 U257-17 U249-17  
 218: .ALU Y<8>`  
 219: U235-4 U152-10 U259-13 U257-13 U249-13  
 219: .ALU Y<9>`  
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226: U105-8 .ALUF<2>

227: U153-3 U154-3 U152-3 U132-3 U133-3  
227: U105-7 .ALUF<3>

228: U161-3 U80-16 U247-16 U245-5 U202-12  
228: U140-3 U139-12 U133-2 U121-5 .AMUX<0>`

229: U82-12 U253-16 U252-2 U225-16 U254-16  
229: U248-19 U152-21 U228-9 .AMUX<10>`

230: U82-14 U253-18 U252-5 U254-18 U225-18  
230: U248-16 U152-19 U228-11 .AMUX<11>`

231: U111-16 U253-3 U252-6 U123-3 U202-3  
231: U248-15 U153-2 U226-5 .AMUX<12>`

232: U111-10 U253-5 U252-15 U123-5 U248-6  
232: U202-5 U153-23 U226-7 .AMUX<13>`

233: U111-12 U253-7 U252-9 U123-7 U248-12  
233: U202-7 U153-21 U226-9 .AMUX<14>`

234: U111-14 U253-9 U252-12 U123-9 U248-9  
234: U202-9 U153-19 U165-3 U226-11 .AMUX<15>`

235: U113-16 U230-9 U146-3 U145-14 U154-2  
235: U125-5 .AMUX<16>`

236: U113-10 U230-6 U146-5 U145-15 U154-23  
236: U125-7 .AMUX<17>`

237: U113-12 U230-5 U146-7 U145-16 U154-21  
237: U125-9 .AMUX<18>`

238: U113-14 U230-2 U146-9 U145-17 U154-19  
238: U125-11 .AMUX<19>`

239: U161-5 U80-10 U247-19 U245-2 U202-14  
239: U140-5 U139-14 U133-23 U121-7 .AMUX<1>`

240: U161-7 U80-12 U247-2 U245-19 U140-7  
240: U139-16 U202-16 U133-21 U121-9 .AMUX<2>`

241: U161-9 U80-14 U247-5 U245-16 U202-18  
241: U140-9 U139-18 U133-19 U121-11 .AMUX<3>`

242: U182-12 U81-16 U247-6 U245-15 U185-3  
242: U140-12 U139-3 U132-2 U163-5 .AMUX<4>`

243: U182-14 U81-10 U247-15 U245-6 U185-5  
243: U140-14 U139-5 U132-23 U163-7 .AMUX<5>`

244: U182-16 U81-12 U247-9 U245-12 U185-7  
 244: U140-16 U139-7 U132-21 U163-9 .AMUX<6>`

245: U182-18 U81-14 U247-12 U245-9 U185-9  
 245: U140-18 U139-9 U132-19 U163-11 .AMUX<7>`

246: U82-16 U253-12 U252-16 U254-12 U225-12  
 246: U248-5 U152-2 U228-5 .AMUX<8>`

247: U82-10 U253-14 U252-19 U254-14 U225-14  
 247: U248-2 U152-23 U228-7 .AMUX<9>`

248: U145-7 U105-12 U186-2 U106-15 .ARITH X

249: U145-8 U105-13 U186-3 U106-17 .ARITH Y

250: U253-19 U253-1 U188-5 .AZRO<15:8>`

251: U146-19 U188-6 .AZRO<19:16>`

252: U139-19 U139-1 U188-4 .AZRO<7:0>`

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 253: U110-2 U86-10 U86-4 .B

254: U160-14 U181-14 U159-14 U200-14 U208-8  
 254: U210-5 .B TIME<0>`

255: U160-13 U181-13 U159-13 U200-13 U231-8  
 255: U210-4 .B TIME<1>`

256: U84-17 U70-12 U87-6 U72-5 .BANK<0>

257: U84-15 U70-4 U87-4 U72-2 .BANK<1>

258: U62-16 U101-3 U133-1 .BMUX<0>`

259: U63-12 U123-16 U102-7 U152-20 .BMUX<10>`

260: U63-14 U123-18 U102-9 U152-18 .BMUX<11>`

261: U64-16 U103-3 U124-12 U153-1 .BMUX<12>`

262: U64-10 U103-5 U124-14 U153-22 .BMUX<13>`

263: U64-12 U103-7 U124-16 U153-20 .BMUX<14>`

264: U64-14 U103-9 U124-18 U153-18 U165-4  
 264: .BMUX<15>`

265: U123-17 U83-16 U102-14 U154-1 .BMUX<16>`

266: U123-15 U83-10 U102-18 U154-22 .BMUX<17>`  
 267: U123-13 U83-12 U102-12 U154-20 .BMUX<18>`  
 268: U123-11 U102-16 U83-14 U154-18 .BMUX<19>`  
 269: U62-10 U101-5 U133-22 .BMUX<1>`  
 270: U62-12 U101-7 U133-20 .BMUX<2>`  
 271: U62-14 U101-9 U133-18 .BMUX<3>`  
 272: U61-16 U101-12 U132-1 .BMUX<4>`  
 273: U61-10 U101-14 U132-22 .BMUX<5>`  
 274: U61-12 U101-16 U132-20 .BMUX<6>`  
 275: U61-14 U101-18 U132-18 .BMUX<7>`  
 276: U63-16 U123-12 U102-3 U152-1 .BMUX<8>`  
 277: U63-10 U123-14 U102-5 U152-22 .BMUX<9>`  
 278: U150-8 U201-9 .BPC:=  
 279: U202-8 U208-3 U201-14 U203-12 .BPC<0>  
 280: U208-4 U203-1 .BPC<0>`  
 281: U160-5 U181-5 U202-6 U159-5 U200-5  
 281: U201-13 .BPC<1>  
 282: U160-4 U181-4 U202-4 U159-4 U200-4  
 282: U201-12 .BPC<2>  
 283: U202-2 U192-13 U201-11 U189-15 U205-1  
 283: .BPC<3>  
 284: U192-7 U203-13 U203-2 U161-1 U182-19  
 284: .BPC<3>`  
 285: U101-1 U101-19 U102-1 U110-3 .B`  
 286: U154-7 U153-16 U165-7 .C<15>  
 287: U154-16 U165-13 .CARRY<19>  
 288: U157-19 U158-1 U137-19 U138-1 U171-12  
 288: .CLK FIFO IN

289: U211-9 U212-6 U203-10 .CLK FIFO OUT  
290: U255-11 U257-11 U256-11 U234-10 .CLK MA'R<5>  
291: U224-11 U247-11 U244-11 U252-11 U230-11  
291: U232-8 .CLK MDOR  
292: U260-11 U243-11 U234-8 .CLK-OR A  
293: U249-11 U246-11 U221-11 U219-11 U234-6  
293: U209-11 .CLK-OR B  
294: U237-12 U236-3 U165-11 U234-12 .CLK-OR C  
295: U227-11 U234-4 U250-11 .CLK-OR D  
296: U73A-4 U130-13 U77-4 U90-13 U130-2  
296: .CLK-16  
297: U239-1 U77-10 .CLK-26  
298: U208-1 U77-6 .CLK-36  
299: U211-10 U234-1 U77-8 .CLK-46  
300: U237-5 U147-11 U148-11 U126-11 U95-5  
300: U210-13 U92-6 U232-10 U73A-5 U240-11  
300: U232-12 U213-11 U86-13 .CLK-4E  
301: U157-1 U158-19 U137-1 U138-19 U240-3  
301: U76-1 U99-1 U207-10 .CLK-4F  
302: U149-6 U207-5 U234-3 U234-5 U234-13  
302: U234-9 U77-1 U240-6 .CLK-4G  
303: U211-11 U215-5 U213-2 U95-8 U207-1  
303: U240-8 U130-4 U233-2 U86-2 .CLK-4J  
304: U131-5 U130-9 U234-2 .CLK-51R  
305: U95-9 U232-1 U77-12 .CLK-6  
306: U239-2 U240-10 J176-1 U240-5 U240-9  
306: U240-1 U240-12 U240-2 U240-4 U240-13  
306: .CLK-7R  
307: U92-4 U90-12 .CLK20R  
308: U147-9 U73A-1 .CLR FIFO L  
309: U132-7 U142-12 .CN+X

310: U152-7 U142-11	.CN+Y
311: U153-7 U142-9	.CN+Z
312: U133-7 U142-13 U105-14	.CN<0>
313: U41-9 U187-11 U189-11	.CND<0>
314: U41-6 U187-10 U189-10	.CND<1>`
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316: U41-2 U185-8 U189-7	.CND<3>
317: U185-12 U187-7	.CND<3>`
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319: U236-13 U212-9 U210-8	.CONT`
320: U185-13 U186-13 U187-15	.CRY
321: U254-3 J196-1	.DIAG INC
322: JB47-1 U66-4 U66-9 U66-2 U66-13 R2-2	
322:	.DIS USTORE L
323: J179-1 U250-7	.DISK INTR L
324: U206-4 U209-15	.DLY QUAL FIFO
325: U206-16 U73A-2	.DLY QUAL FIFO`
326: U239-3 U216-6 U216-11	.DON'T IO ENB
327: U198-4 U199-4 U242-4 U197-4 U220-4	
327: U241-4 U222-4 U223-4 U170-19	.DON'T MASK
328: U108-13 U131-1	.DON'T PAGE`
329: U212-12 U209-5	.DON'T WRCS`
330: U164-19 U166-4 U174-2	.DST BITS<0>
331: U164-16 U166-3 U174-1	.DST BITS<1>
332: U164-15 U166-2 U174-23	.DST BITS<2>
333: U164-12 U166-1 U174-22	.DST BITS<3>
334: U170-5 U169-17	.DST QUAD

335: U164-9 U169-5	.DST WRD<0>`
336: U164-6 U169-4	.DST WRD<1>`
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342: U221-6 U222-3	.DST<14>
343: U221-9 U222-2	.DST<15>
344: U219-2 U197-2	.DST<1>
345: U219-19 U220-3	.DST<2>
346: U219-5 U220-2	.DST<3>
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348: U219-15 U242-2	.DST<5>
349: U219-6 U241-3	.DST<6>
350: U219-9 U241-2	.DST<7>
351: U221-16 U199-3	.DST<8>
352: U221-2 U199-2	.DST<9>
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353: U8-15 U7-15	.E BOOT ROM`
354: U245-1 U248-1 U229-13	.EIOB`
355: U170-12 U174-8	.EL
356: U247-1 U252-1 U229-12	.EMDO`
357: U84-19 U90-4	.ENB BANK`
358: U144-1 U104-4	.ENB DISPATCH`
359: U249-1 U246-1 U207-6	.ENB IODO`
360: U255-1 U257-1 U256-1 U232-11	.ENB MA`



361: U259-1 U258-1 U213-8 .ENB MDI`  
362: U213-4 U193-14 U89-3 U91-3 .ENB MDR L  
363: U230-1 U229-11 .ENB MDX`  
364: U162-19 U162-1 U104-2 U203-5 .ENB NEXT INST`  
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366: U159-11 U200-11 U203-11 .ENB OP<1>`  
367: U109-1 U131-3 .ENB PAGE`  
368: U66-6 U9-11 U1-11 U4-11 U32-11 U28-11  
368: U29-11 U6-11 U35-11 U49-11 U48-11  
368: U15-11 U11-11 U42-11 U50-11 U19-11  
368: U39-11 .ENB RAM` A  
369: U66-11 U36-11 U26-11 U5-11 U34-11  
369: U52-11 U27-11 U33-11 U59-11 U46-11  
369: U20-11 U24-11 U21-11 U16-11 U18-11  
369: U22-11 U44-11 .ENB RAM` B  
370: U66-8 U31-11 U3-11 U54-11 U53-11  
370: U57-11 U30-11 U2-11 U58-11 U38-11  
370: U45-11 U25-11 U12-11 U37-11 U13-11  
370: U47-11 U40-11 .ENB RAM` C  
371: U141-1 U183-1 U108-16 .ENB SHIFT TO JMUX`  
372: U140-19 U140-1 U202-19 U225-1 U229-15  
372: .ENB SHIFT`  
373: U229-7 U231-5 .ENB STK`  
374: U202-1 U185-19 U254-1 U123-19 U145-11  
374: U229-10 .ENB UST`  
375: U84-1 U104-5 .ENB VECTOR`  
376: U122-1 U122-19 U108-15 .ENB Y`  
377: U103-1 U124-19 U90-6 .ENB Z ADDR`  
378: U144-19 U104-7 .ENB Z OP FILL`  
379: U146-1 U104-6 .ENB Z VEC FILL`  
380: U185-15 U186-19 U187-14 .EQL

381: U170-15 U174-7 .ER  
382: U80-18 U81-18 U111-18 U82-18 U113-18  
382: U229-9 .EX`  
383: U110-15 U150-19 U193-19 U188-10 U131-12  
383: U231-13 .F<0>  
384: U215-2 U110-14 U216-12 .F<0>`  
385: U110-10 U150-5 U193-5 U188-11 U131-13  
385: .F<1>  
386: U215-1 U110-11 U216-1 U231-12 .F<1>`  
387: U157-11 U172-6 .FIFO EVEN/ODD  
388: U157-17 U210-2 .FIFO OR  
389: U133-17 U142-3 .G<0>`  
390: U132-17 U142-1 .G<1>`  
391: U152-17 U142-14 .G<2>`  
392: U153-17 U142-5 .G<3>`  
393: U204-11 U165-18 .GRANT  
394: J171-1 U254-9 .GRANT DMA  
395: U110-7 U104-10 U67-19 .H  
396: J148-1 U231-2 .HOLD OFF L  
397: U205-9 U206-12 .HOLD VICTIM  
398: U237-1 U110-6 .H`  
399: U227-3 J178-1 .I/O MEM RQST  
400: U227-4 J153-1 .I/O MEM WR  
401: U254-17 U236-5 .INC DDS  
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403: U75-10 U120-2 U97-5 .INDEX<1>  
404: U75-4 U98-5 U97-6 .INDEX<2>  
405: U96-9 U120-9 U97-9 .INDEX<3>

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408: U94-4 U93-4 U97-16	.INDEX<6>
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411: U254-7 J72-1	.INIT L
412: U232-5 U190-1 U168-1 U164-1 U167-1	
412: U238-4 U227-1 U69-1 U97-1	.INIT*
413: U209-3 U251-15	.INT P
414: U189-2 U209-2	.INTR PEND
415: J69-1 U225-3	.IOA<0>
416: J169-1 U225-5	.IOA<1>
417: J68-1 U225-7	.IOA<2>
418: U225-9 J168-1	.IOA<3>
419: J67-1 U206-3	.IOA<4>
420: J167-1 U206-5	.IOA<5>
421: J66-1 U206-7	.IOA<6>
422: J166-1 U206-9	.IOA<7>
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423:	.IOB ENB L
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 477: U55-11 U41-11 U43-11 U215-6 JC25-1  
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 478: U56-11 U71-11 U170-11 U85-11 U60-11  
 478: U110-9 U186-1 U201-2 U213-12 .LD MIR` B  
 479: U207-2 U210-10 U209-6 .LD OP  
 480: U68-6 U67-7 .LD REG  
 481: U167-11 U149-14 .LD S  
 482: U147-3 U127-11 U128-11 U95-4 .LD SHIFT CMD  
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 483: .LD VICTIM`  
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 484: U149-12 .LD W  
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 487: U232-9 U209-19 .LMDO VALID H  
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 490: U151-19 U131-11 U131-2 .LONG JUMP`  
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575: U182-1 U161-19 U229-14 U203-4 U206-6	

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594: U153-15 U142-6 .P<3>`  
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 601: U205-2 U188-1 .PROC NEEDS MDI  
 602: U86-12 U67-14 U68-5 .PUSH  
 603: U212-2 U169-12 U209-14 .QUAL FIFO  
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624: U173-9 J184-1 .RAS NOW

625: U213-3 U193-11 U73A-9 U88-1 U79-1  
625: .RD VICTIM

626: U149-11 U212-10 .RELD OP

627: U100-1 U107-1 U104-3 U73A-10 .REVIVE VICTIM`

628: U237-4 U171-11 .RO DATA RDY

629: U190-15 U171-5 U179-19 U180-19 U126-1  
629: U148-1 U185-6 U135-1 U117-1 U178-1  
629: U118-1 .RO/PS

630: U156-1 U177-1 U158-9 U138-9 U137-9  
630: U136-1 U116-1 U147-1 U147-4 U166-15  
630: U174-20 U185-14 U213-10 .RO/PS`

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631: U242-5 U198-5 U199-5 U164-5 .ROP FN<0>`

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670: U175-9 U115-9 U166-6 U148-2 .SHIFT CNTL<3>  
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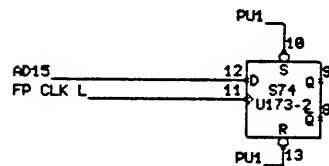
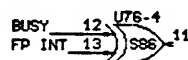
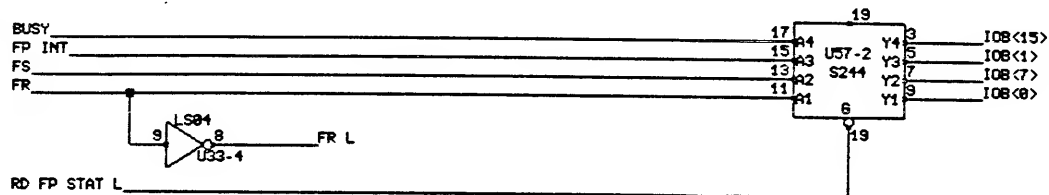


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893: U130-8 .WR RAM`  
894: U150-6 U92-3 U212-13 .WRCS  
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898: U75-8 .X ADDR<1>  
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946: U43-5 U206-13 .Z<6>  
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947: U207-4 U206-11 .Z<7>  
948: U67-6 U86-1 .ZERO BANK



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TITLE

FLOATING POINT CONTROL

e01.dp

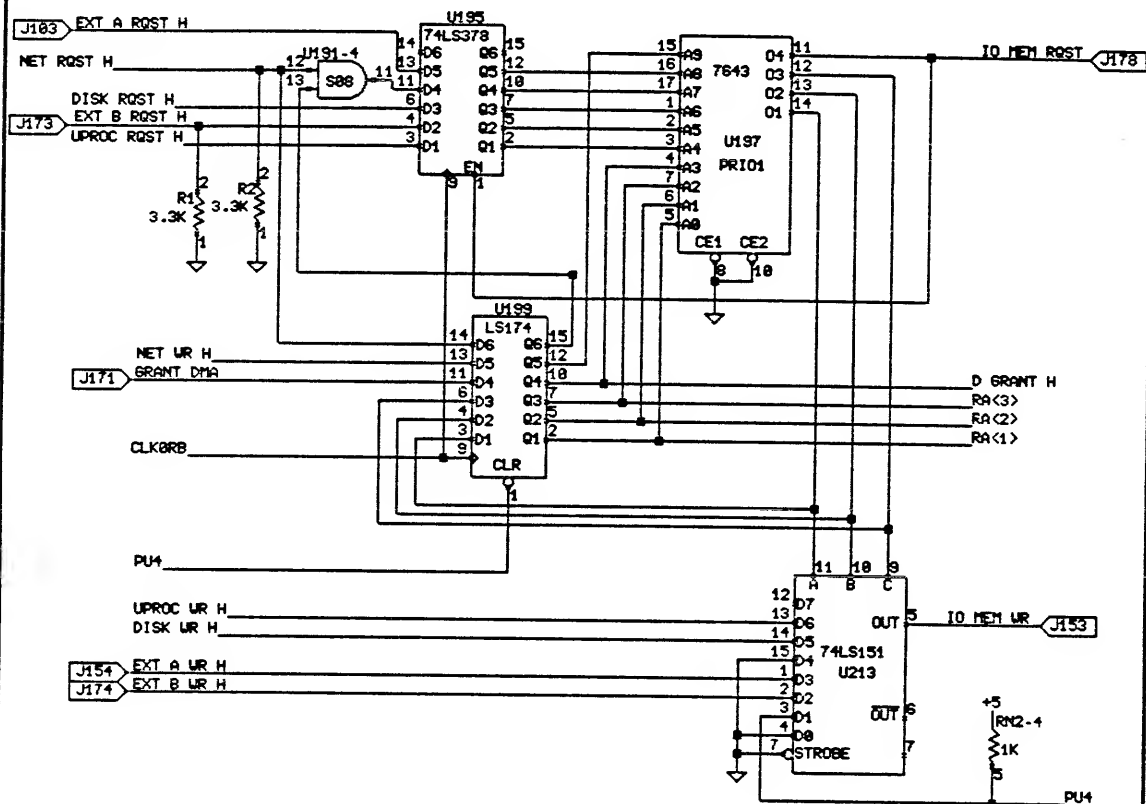
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UPDATED	APR/83/84 STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B

PAGE 1 OF 56



RA/UA	RUA/ CHANNEL	HDR ADDR	DATA ADDR
<unused>	7	-	-
Uproc	6	1	14 15
Disk	5	2	12 13
Net Xmit	4	3	10 11
Ext A	3	4	6 7
Ext B	2	5	4 5
Net Rev	1	6	2 3
Idle	0	7	/load RAM

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TITLE

DMA PRIORITY ENCODER

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e82.dp

PERQ

DESIGNED WCH  
DRAWN 13 Sep 82 16:15:01 SBokse  
UPDATED APR/83/84 STECK

SIZE  
A

CODE  
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IDENTIFICATION

0 0 0 6 -

VAR

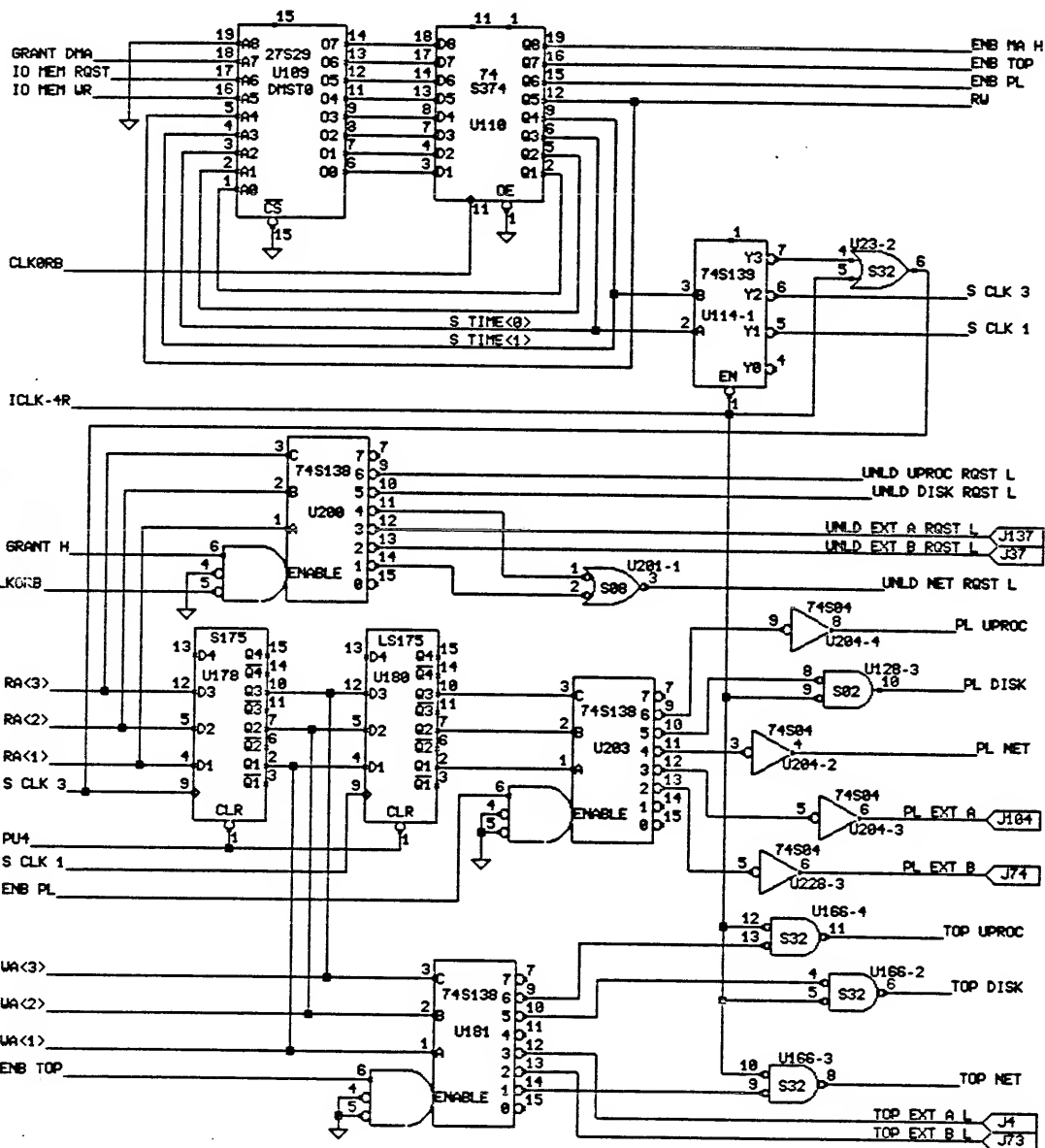
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0 2

AN

PROJ : ETHERNET IO BOARD U/ETHERNET Version B

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TITLE

DMA STATE MACHINE

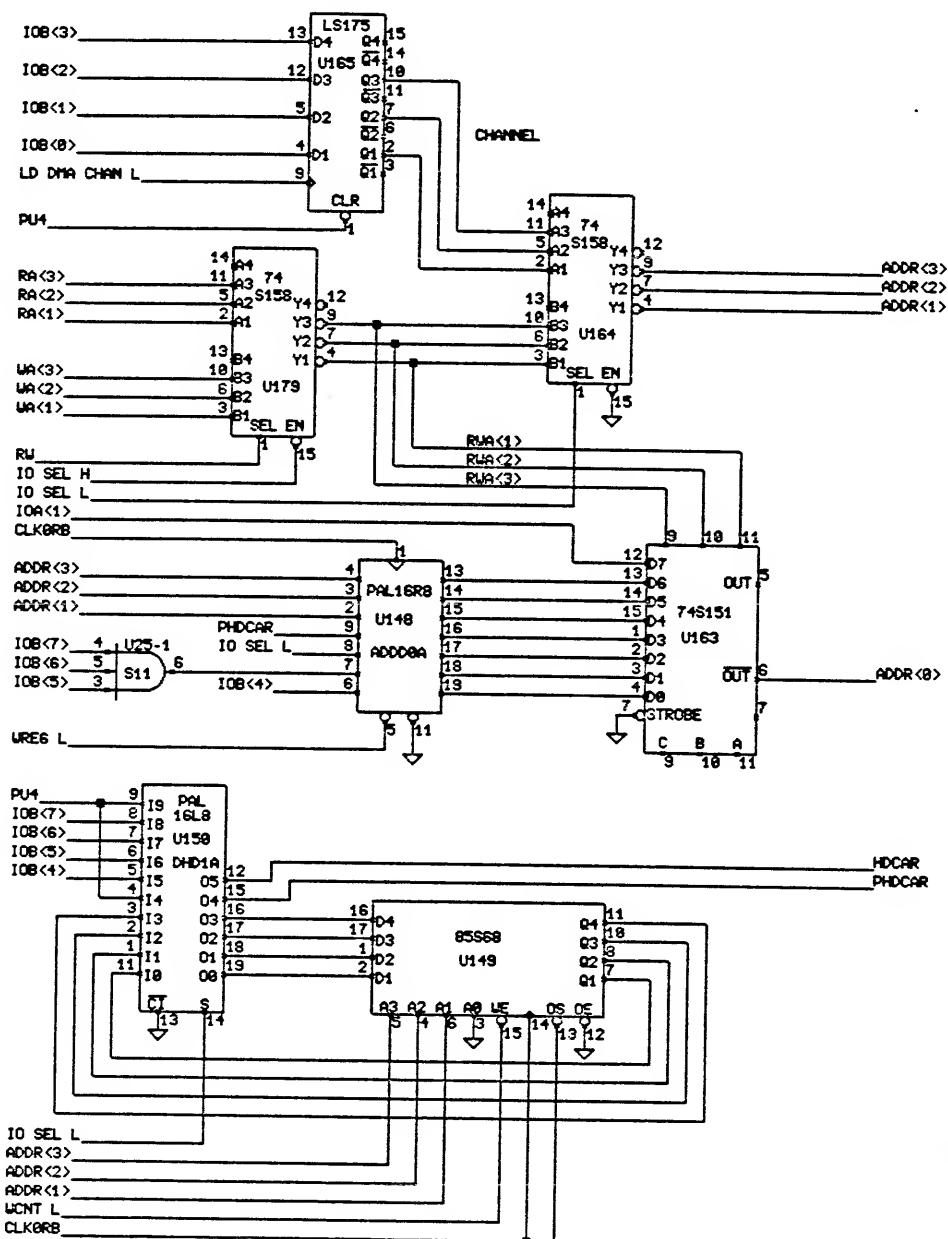
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e83.dip

**PERQ**

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UPDATED	APR/83/84 STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
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PRJ : ETHERNET IO BOARD W/ETHERNET Version B			PAGE 3 OF 56	



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TITLE

RAM ADDRESSING

e01.db

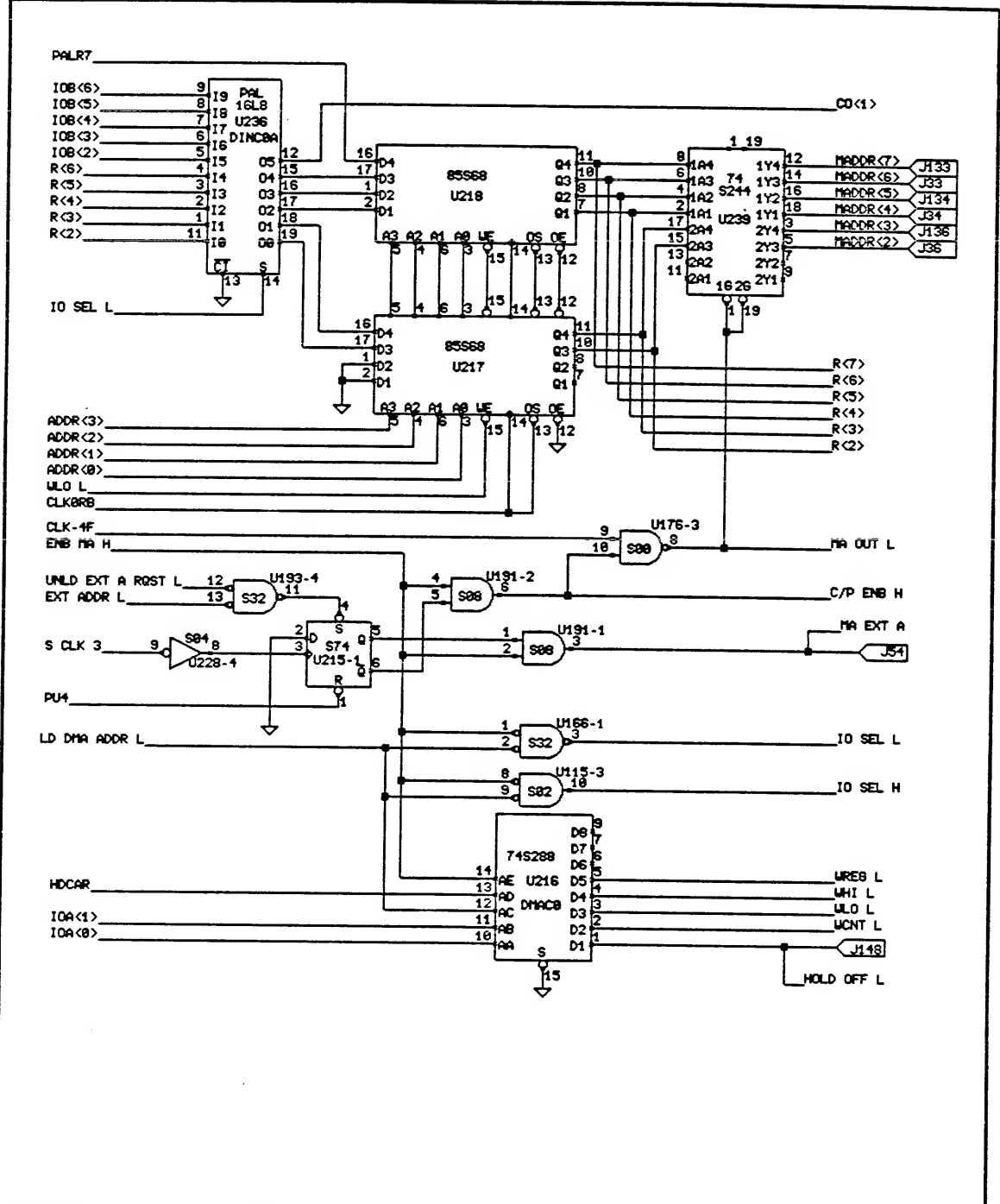
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DRAWN	13 Sep 82 16:45:01 SBokse
UPDATED	18 Jan 85 STECK

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PROJ : ETHERNET IO BOARD U/ETHERNET Version B				

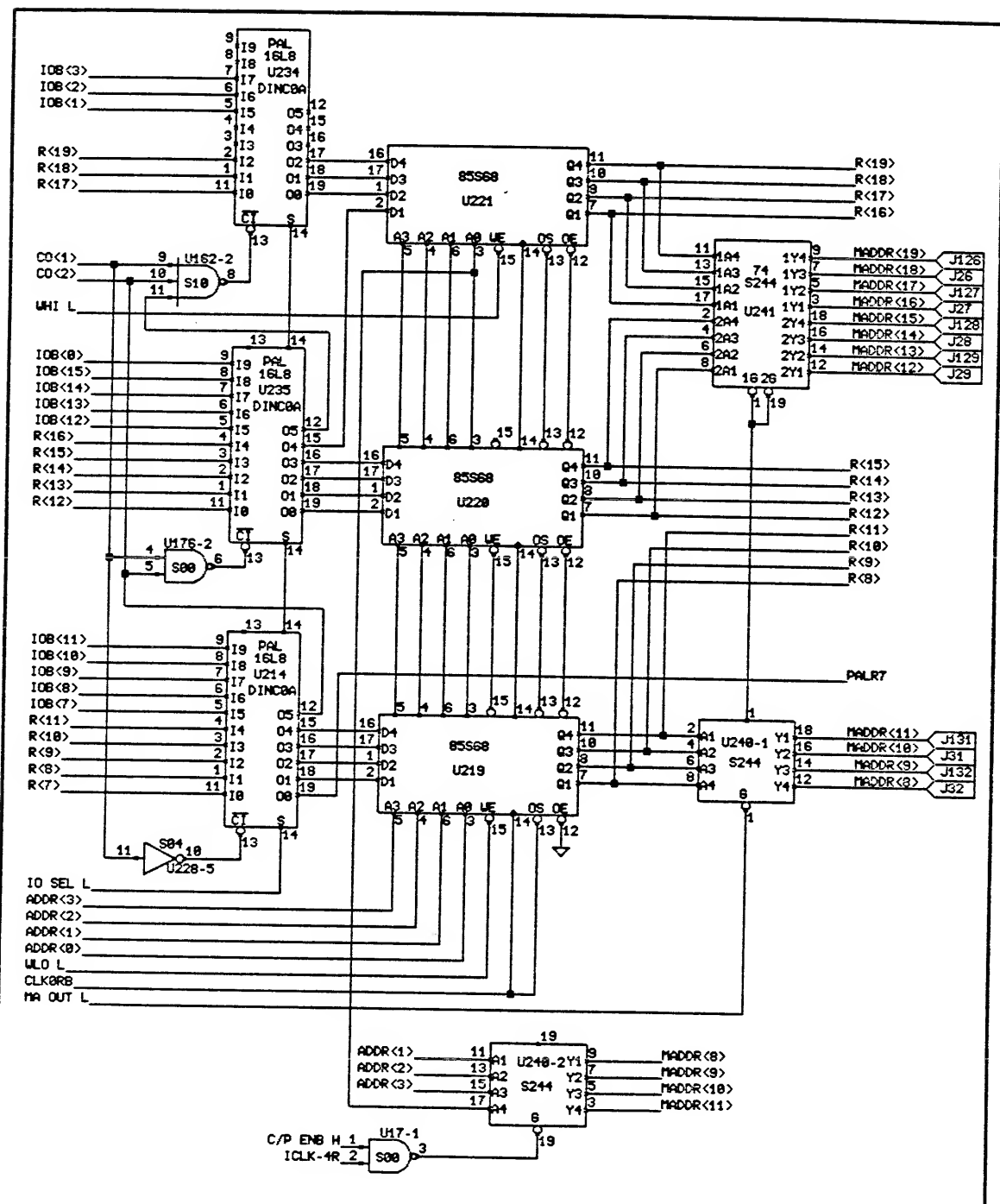
PAGE 4 OF 56



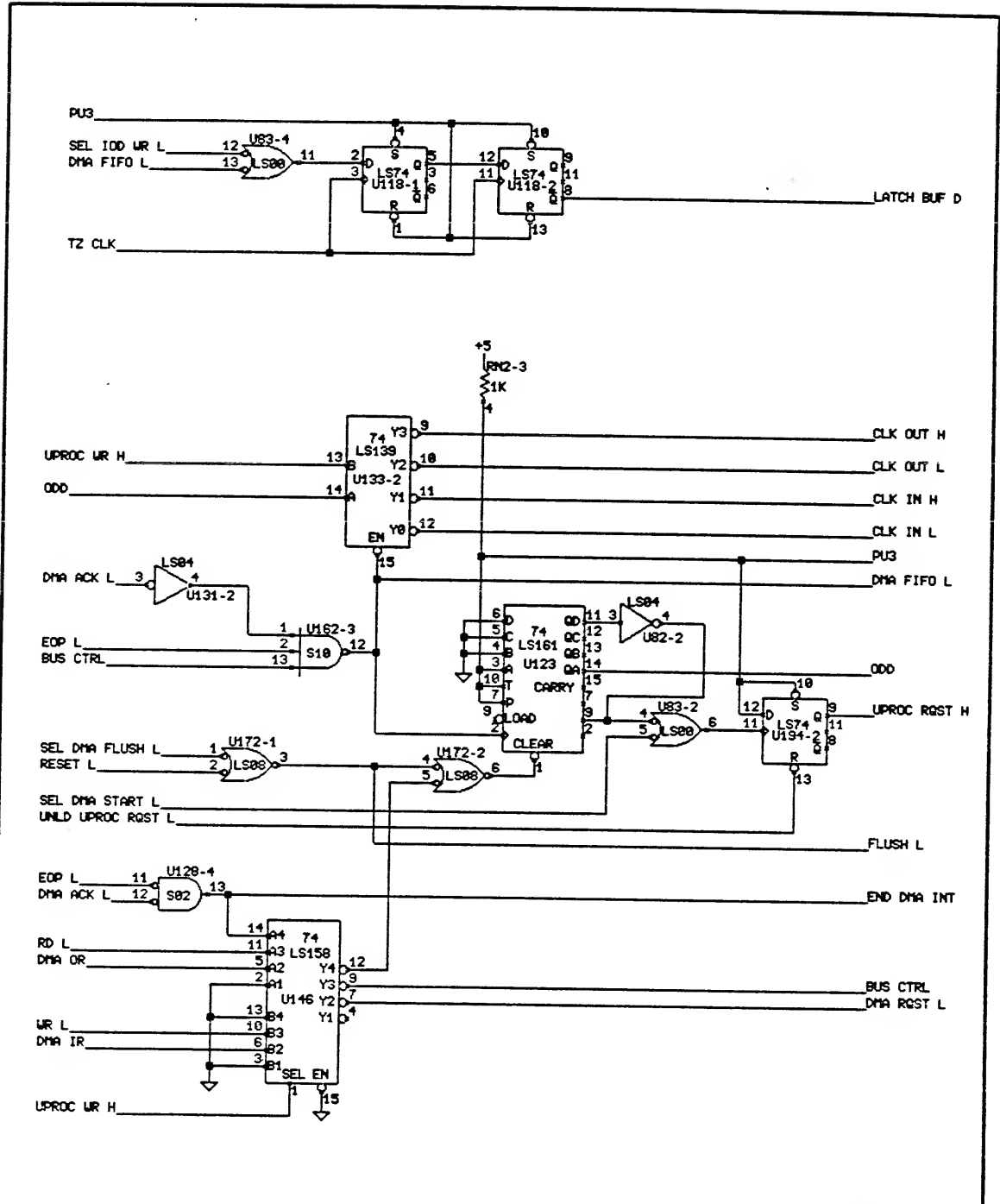


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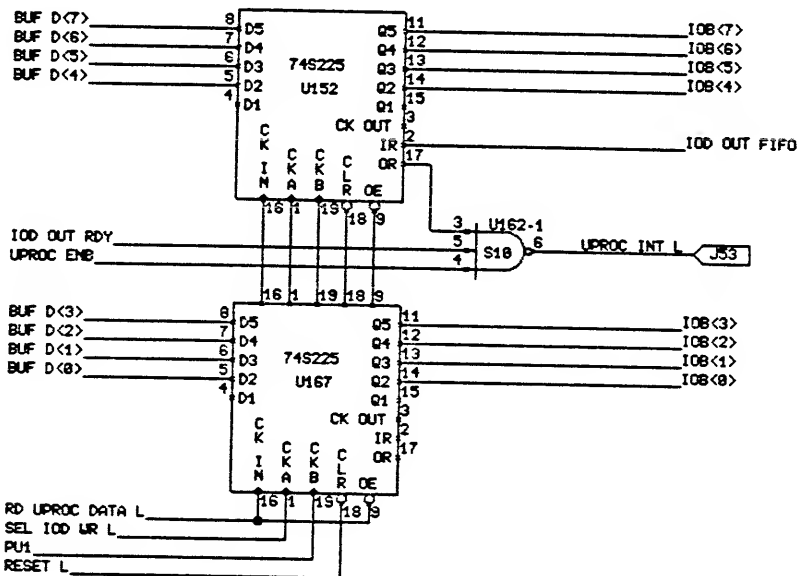
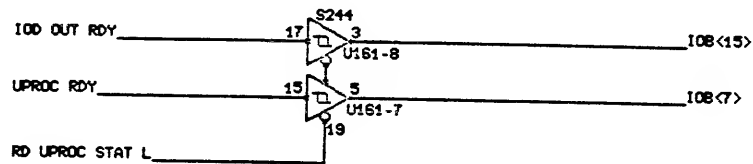
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TITLE				DMA ADDRESS RAM			
DESIGNED				e86.db			
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	UPDATED	18 Jan 85	STECK	PROJ :	ETHERNET IO BOARD U/ETHERNET Version B	PAGE 6 OF 56	REV
							AS



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				TITLE				
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	UPDATED	APR/83/84	STECK	PROJ :      ETHERNET 10 BOARD U/ETHERNET Version B				PAGE 7 OF 56



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TITLE

Z80 I/O BUS INPUT

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e08.db

**PERQ**

DESIGNED WCH

DRAWN 13 Sep 82 16:45:01 SBokse

UPDATED APR/83/84 STECK

SIZE

CODE

IDENTIFICATION

VAR

REV

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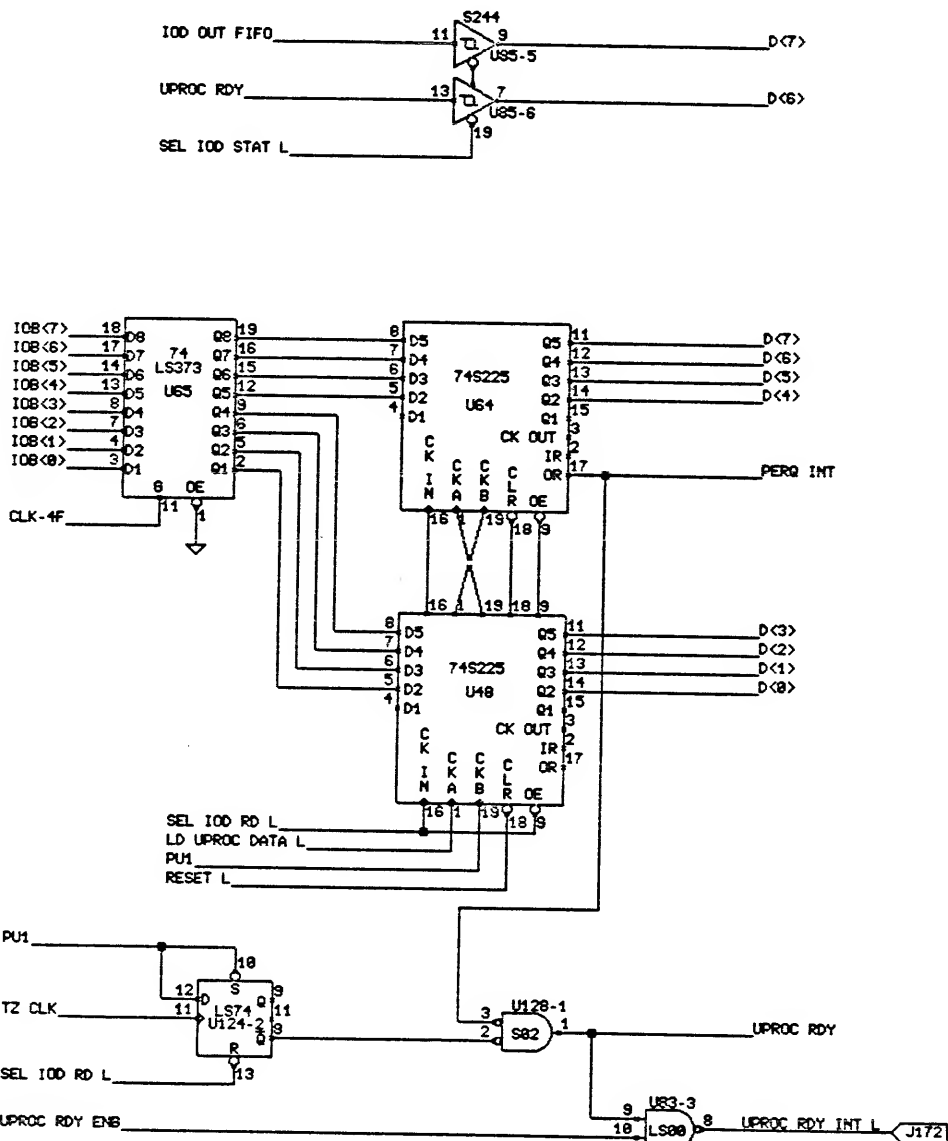
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0 2

AN

PROJ : ETHERNET IO BOARD U/ETHERNET Version B

PAGE 8 OF 56



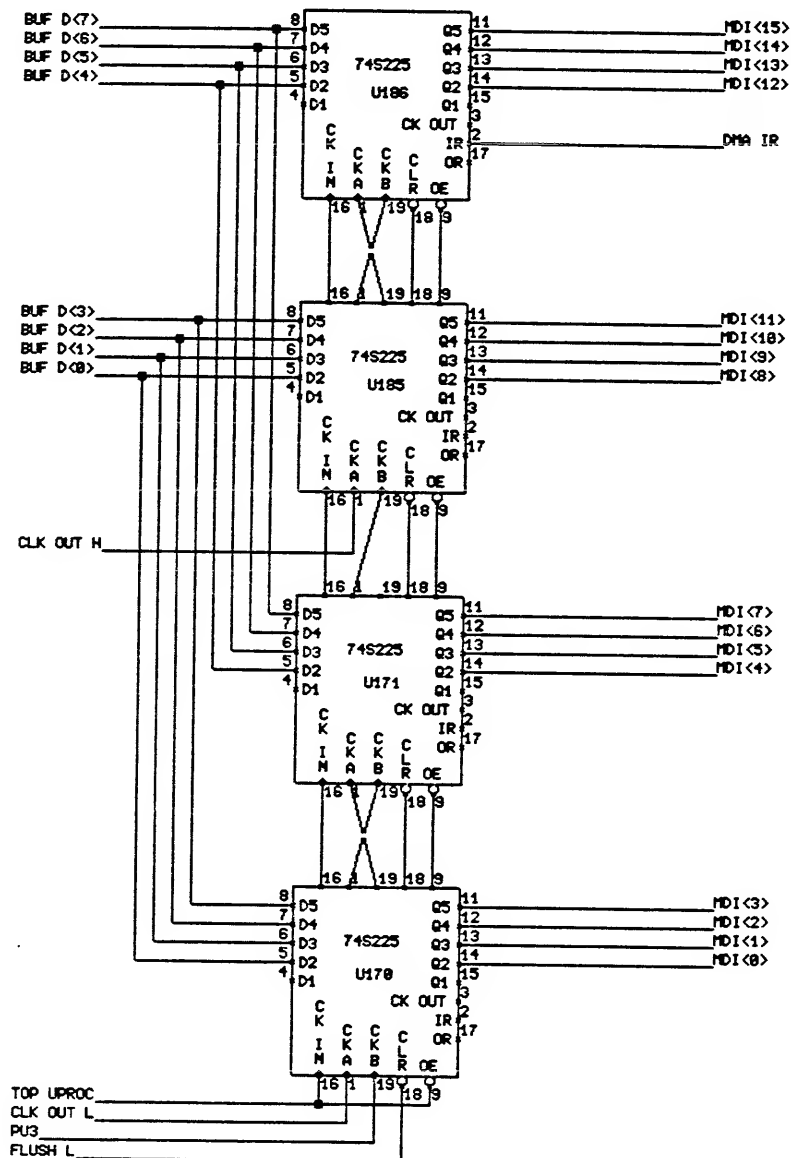
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COPYRIGHT (c) 1984  
e89.db

**PERQ**

DESIGNED	WCH
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UPDATED	APR/83/84 STECK

TITLE		286 I/O BUS INPUT		IDENTIFICATION		VAR	REV
SIZE	CODE	0006 -		02	AN		
PROJ : ETHERNET IO BOARD U/ETHERNET Version B PAGE 9 OF 56							



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TITLE

280 MEMORY BUS OUTPUT

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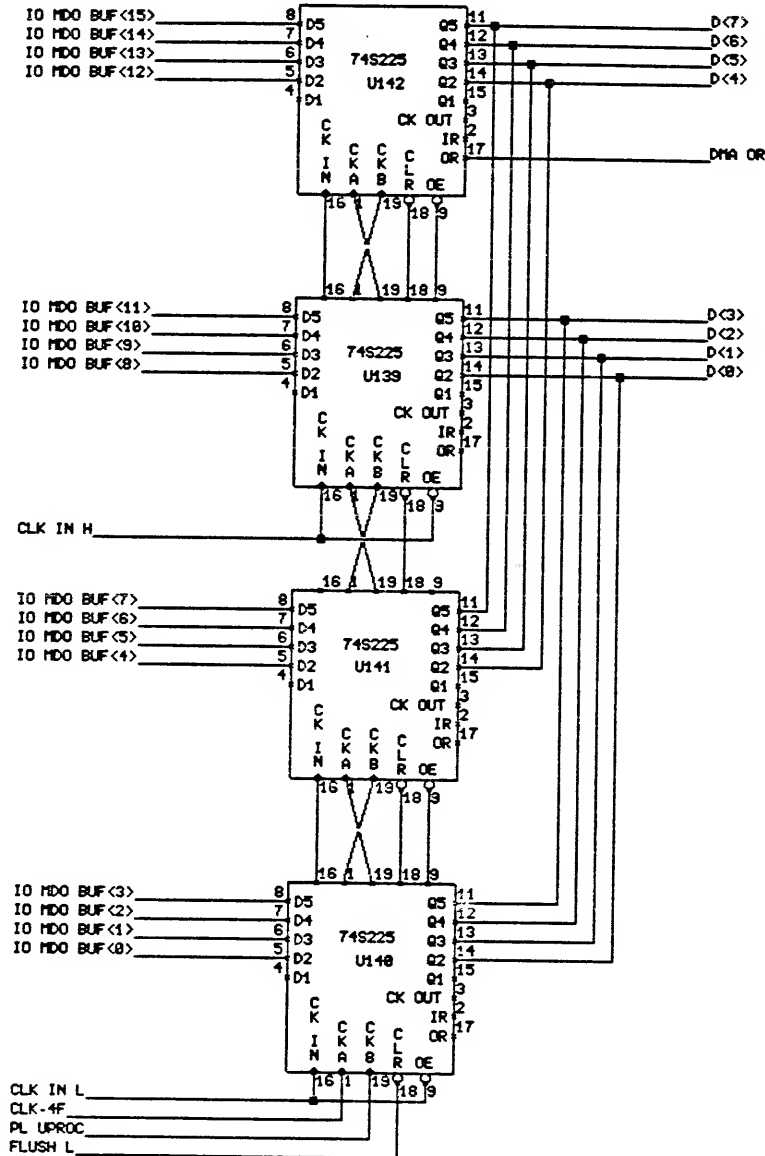
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**PERQ**

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UPDATED	APR/03/84 STECK

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PROJ : ETHERNET IO BOARD W/ETHERNET Version B				

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TITLE Z80 MEMORY BUS INPUT

e11.dp

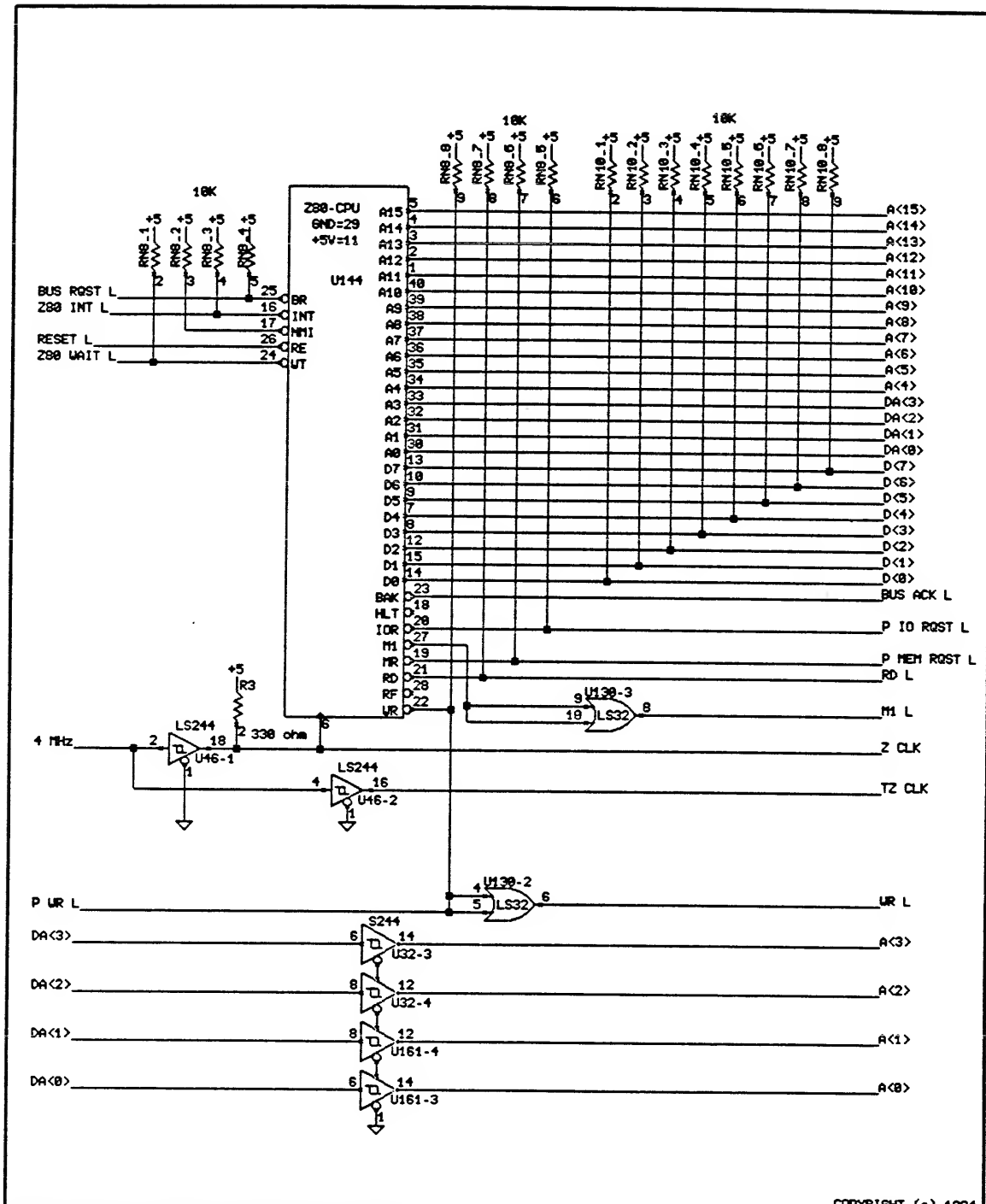
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B

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TITLE

Z80 MPU

e12.sp

PERQ

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UPDATED	APR/83/84

SSokse
STECK

SIZE	CODE
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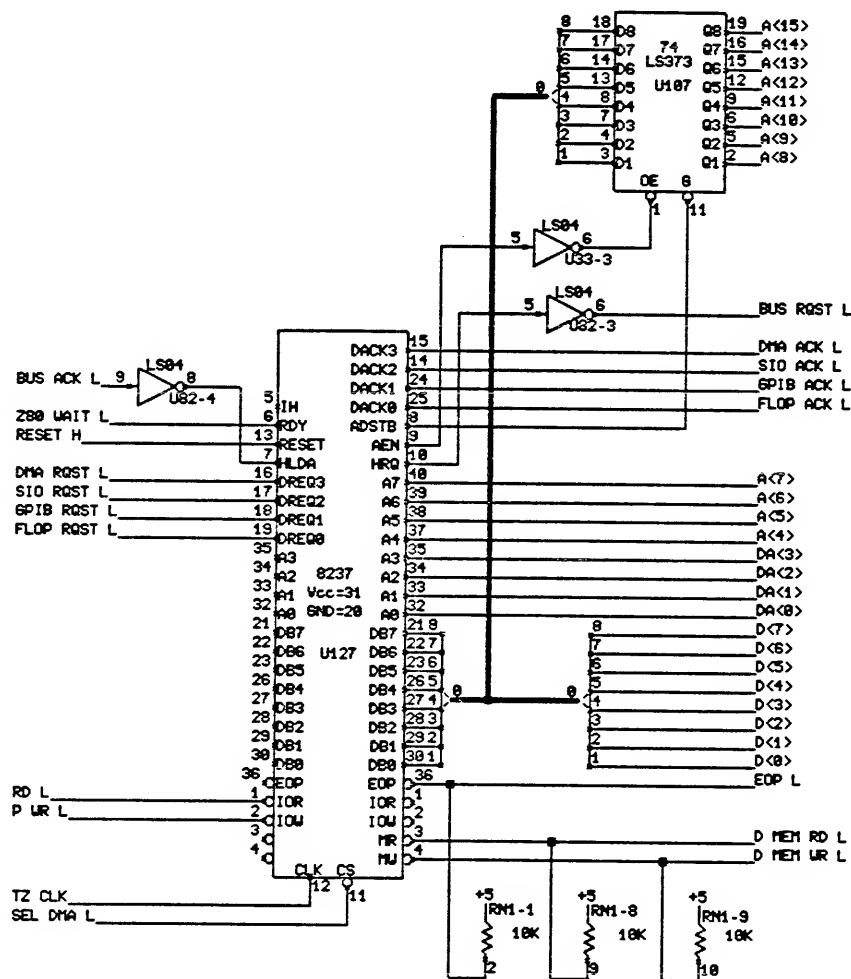
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VAR	REV
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PROJ : ETHERNET 10 BOARD W/ETHERNET Version B PAGE 12 OF 56

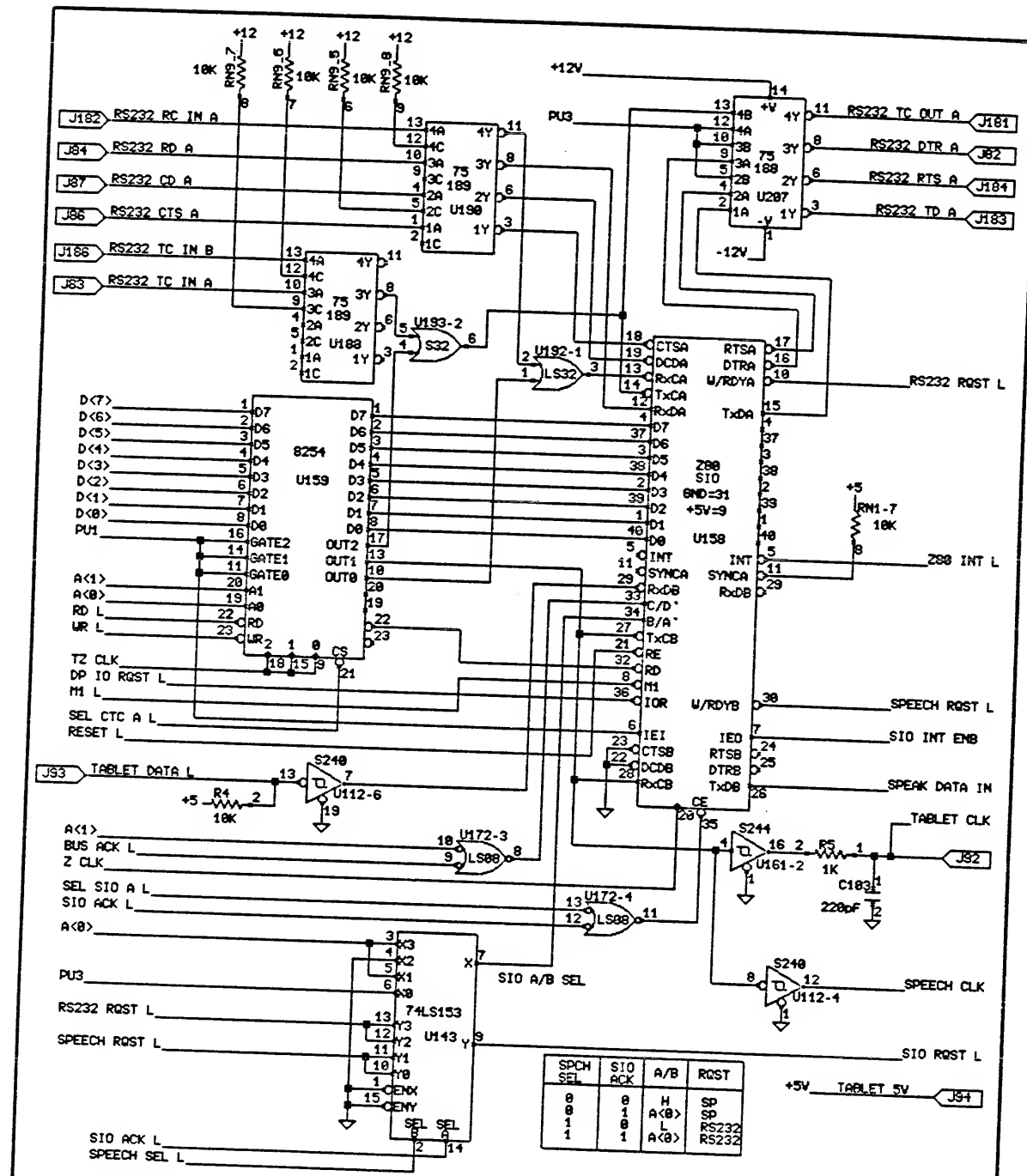


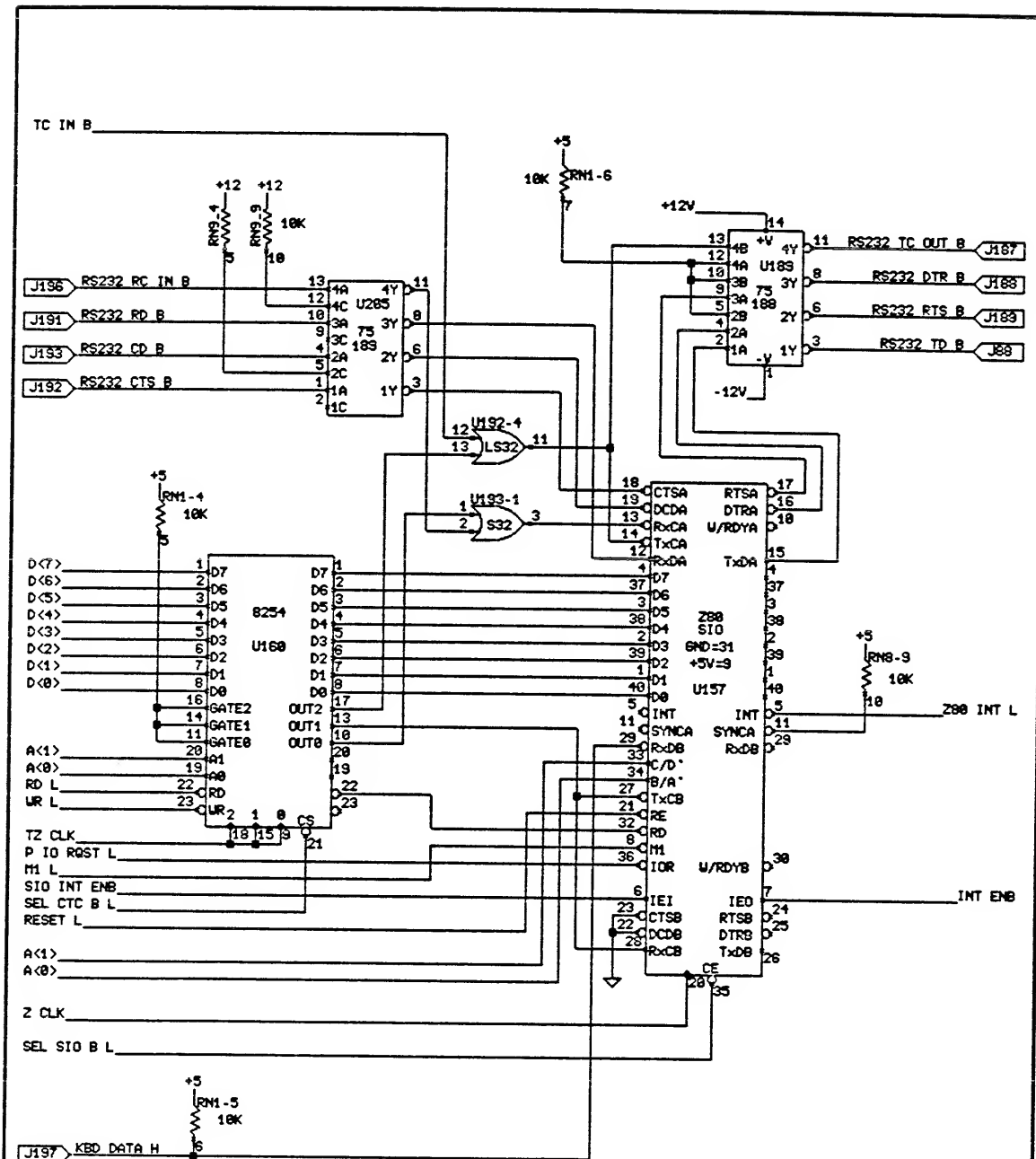
PAGE 13 OF 56



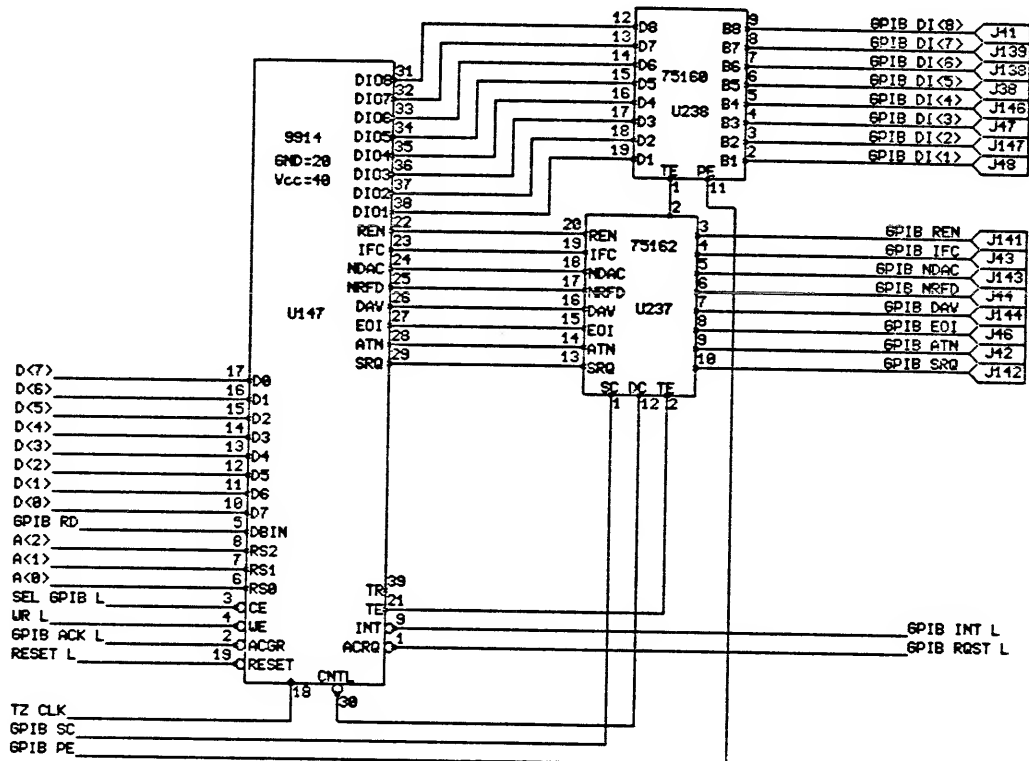
THIS DOCUMENT IS NOT TO BE REPRODUCED IN ANY FORM OR TRANSMITTED IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AUTHORIZATION OF PERQ SYSTEMS CORPORATION.				TITLE				Z80 DMA				e14.db			
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UPDATED				FEB-23-84				0 0 0 6 -				0 2			
PERQ				SBokse				A				AM			
STECK				PROJ :				ETHERNET IO BOARD U/ETHERNET Version B				PAGE 14 OF 56			

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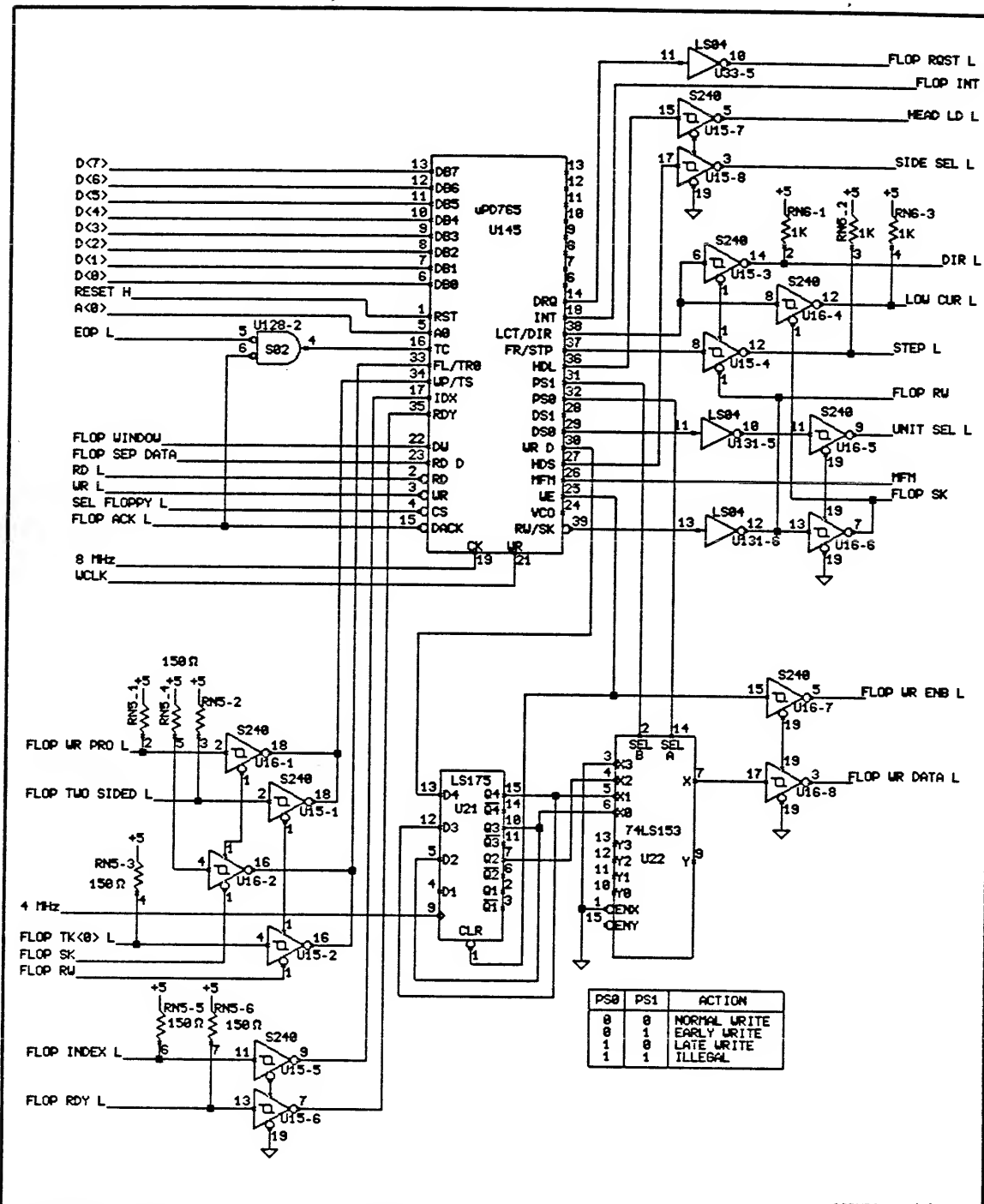




THIS DOCUMENT IS NOT TO BE REPRODUCED IN ANY FORM OR TRANSMITTED IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN AUTHORIZATION OF PERQ SYSTEMS CORPORATION.				TITLE				Z80 SERIAL IO				e16.db			
DESIGNED				WCH				SIZE				IDENTIFICATION			
DRAWN				13 Sep 82				A				0006 -			
UPDATED				MAY/23/84				STECK				02			
PROJ :				ETHERNET IO BOARD U/ETHERNET				Version B				PAGE 16 OF 56			



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TITLE				280 GPB IO			
DESIGNED				e17.db			
DRAUN				0 0 0 6 -			
UPDATED				0 2			
PROJ :				ETHERNET IO BOARD W/ETHERNET			
Version B				PAGE 17 OF 56			



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TITLE

280 FLOPPY

e18.db

**PERQ**

DESIGNED  
13 Sep 82  
DRAIN  
16:45:81  
WCH  
SBokse

SIZE  
A

CODE  
1 1

IDENTIFICATION  
8 8 8 6 -

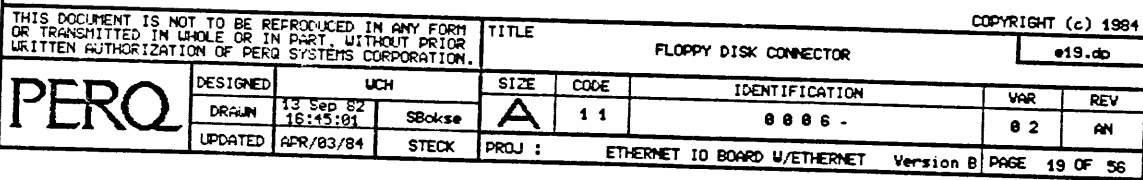
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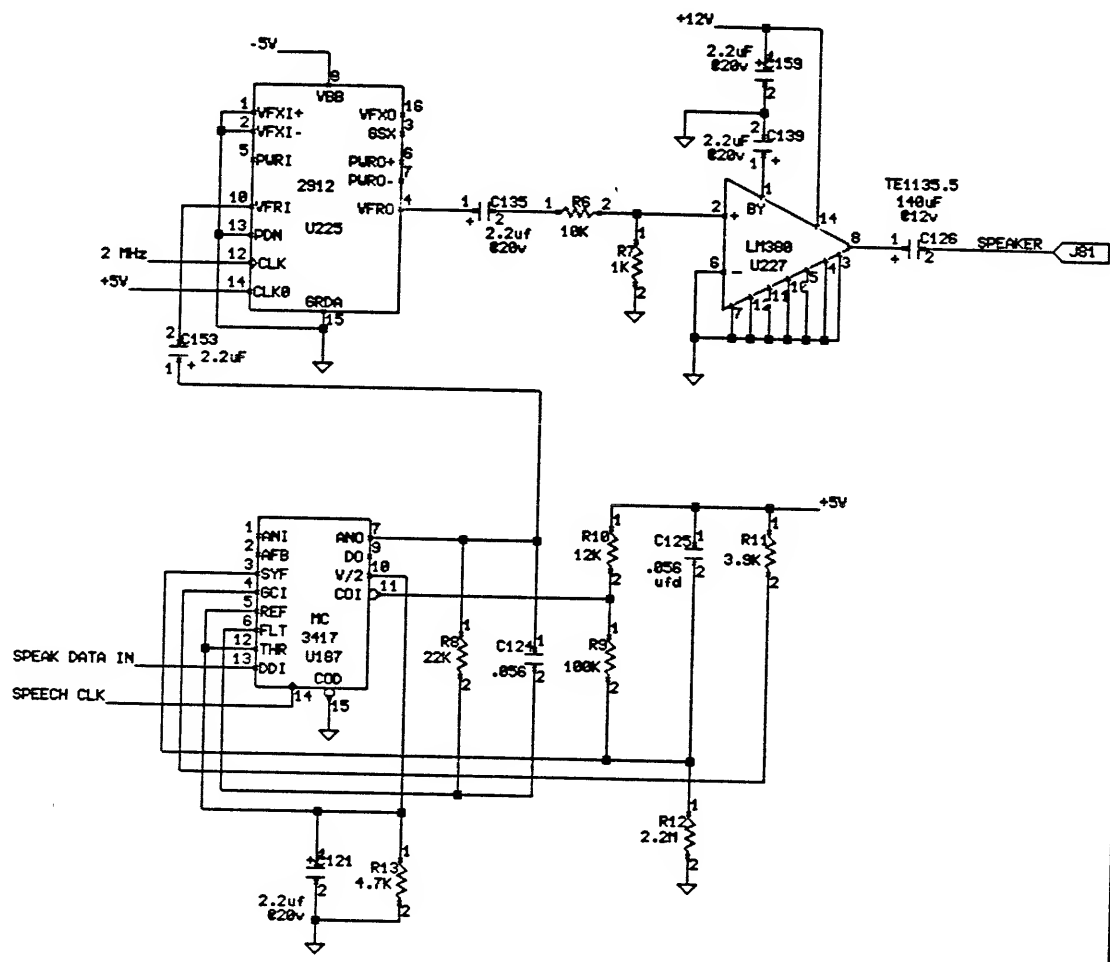
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PROJ :

ETHERNET IO BOARD U/ETHERNET Version B

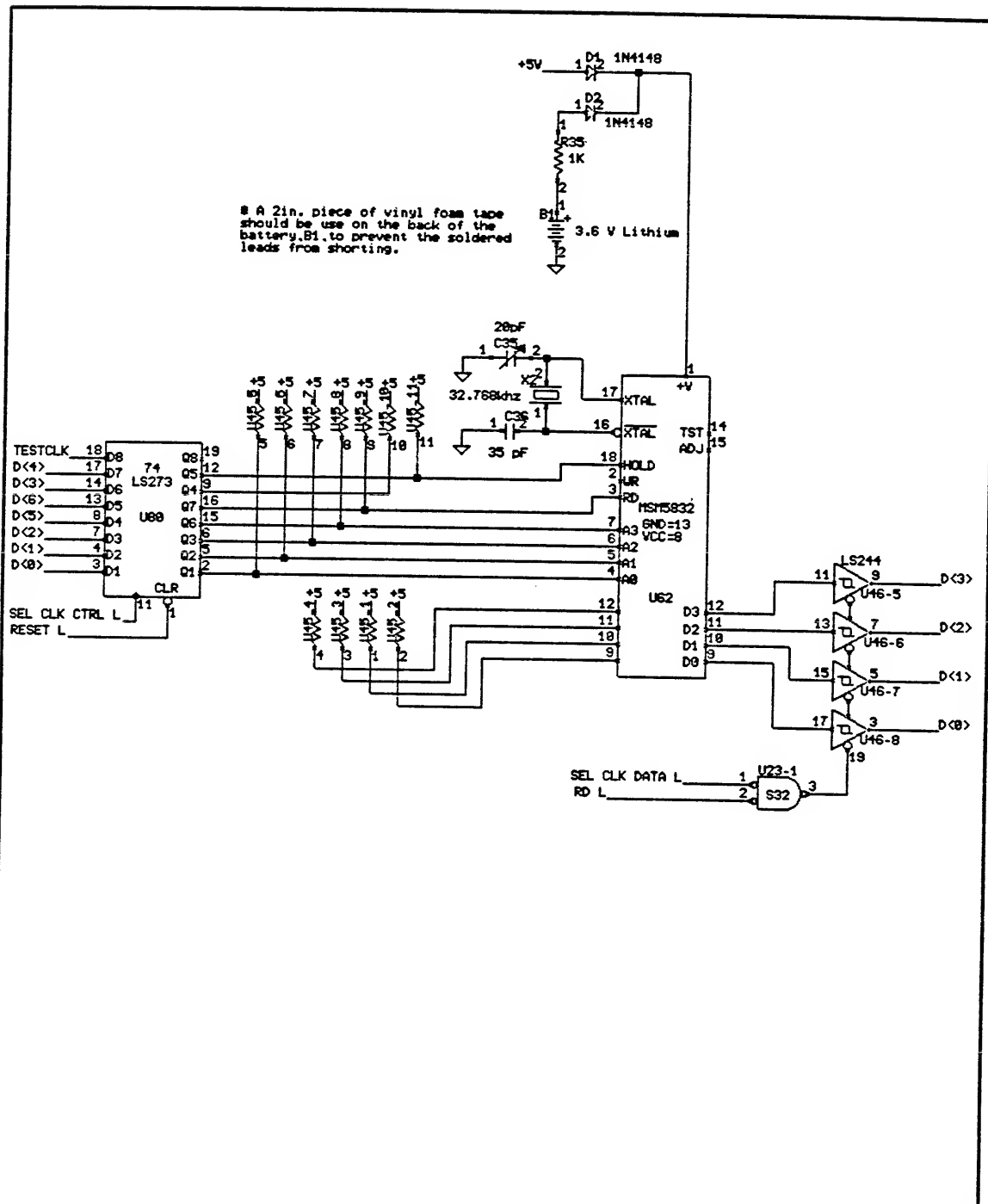
PAGE 18 OF 56





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								e28.db	
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	UPDATED	APR/83/84	STECK		PROJ :	ETHERNET IO BOARD W/ETHERNET Version B		PAGE 28 OF 56	





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TITLE

REAL TIME CLOCK

©21.dp

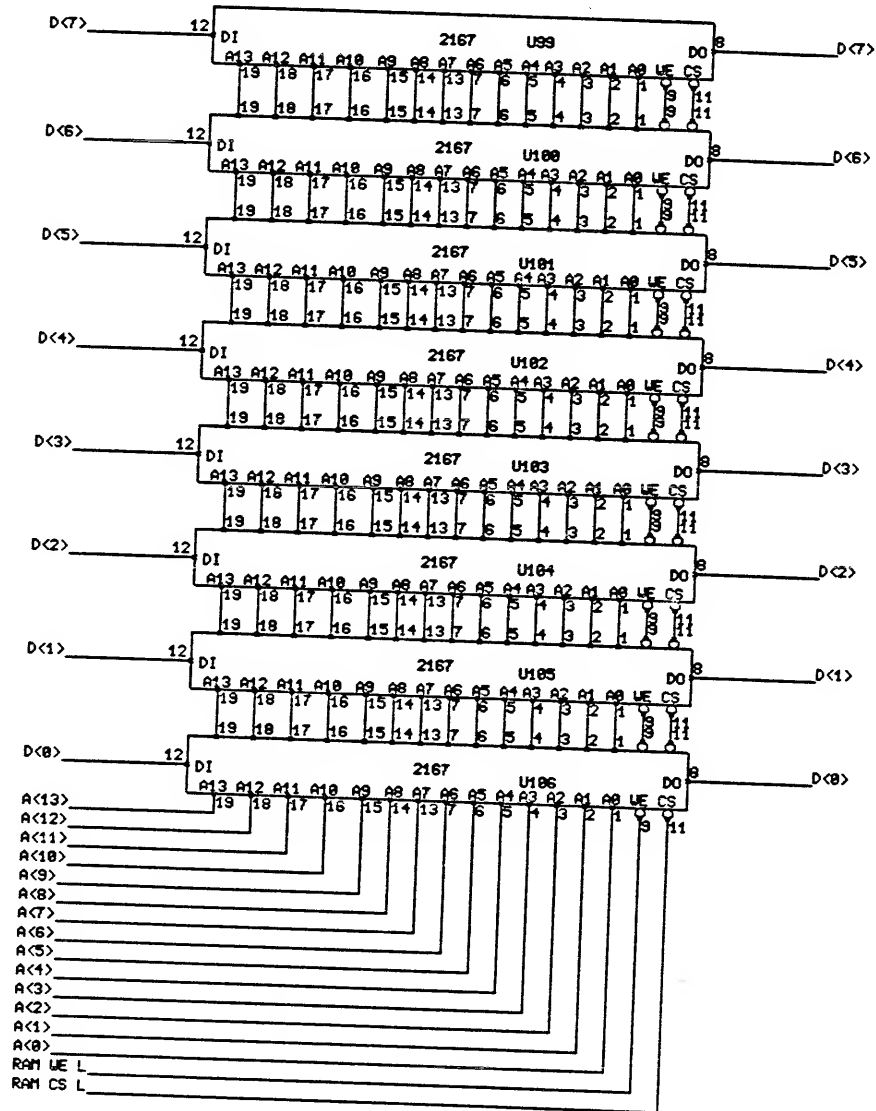
**PERQ**

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UPDATED	MAY/24/84	STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
A	1 1	0 0 0 6 -	0 2	AQ

PROJ : ETHERNET IO BOARD U/ETHERNET Version B PAGE 21 OF 56





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TITLE

Z80 RAM

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e23.db

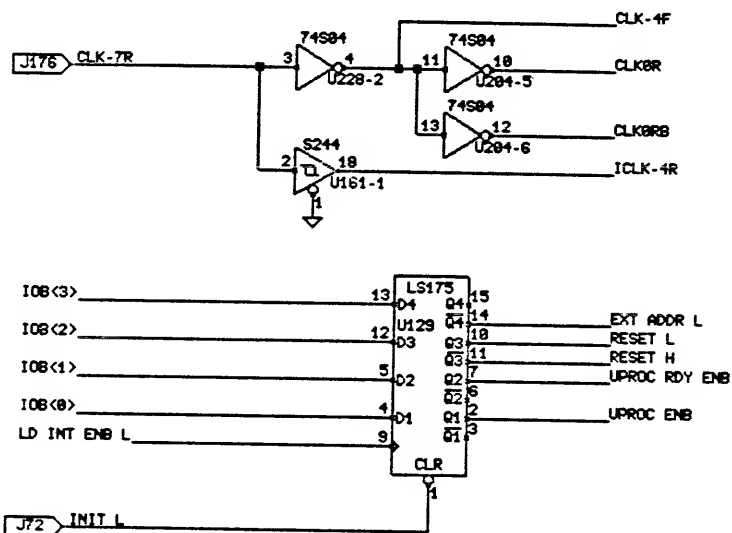
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PROJ : ETHERNET 10 BOARD W/ETHERNET Version B

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TITLE

IO BUS CONTROL & SYSTEM CLOCKS

•24.db

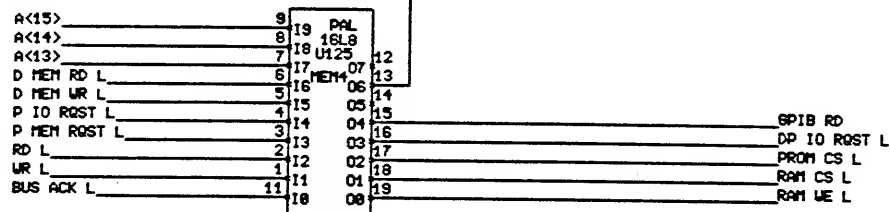
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B PAGE 24 OF 56				

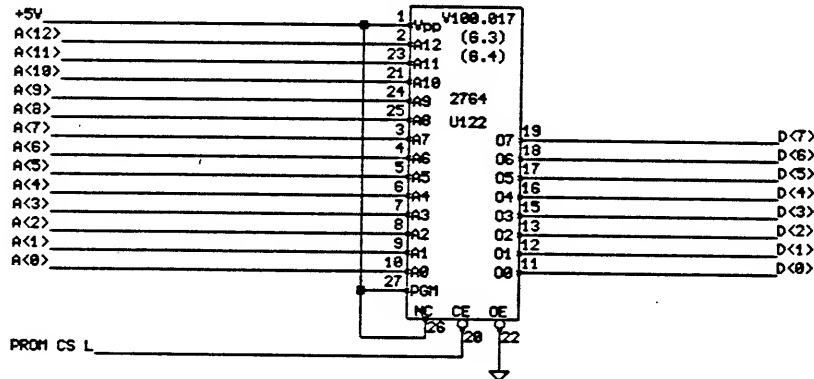
PAGE 25 OF 56

END DMA INT



# Z80 BOOT PROM

(FOR 6.3 & 6.4 SOFTWARE, USE PROM V100.017)



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TITLE

MEMORY CONTROL

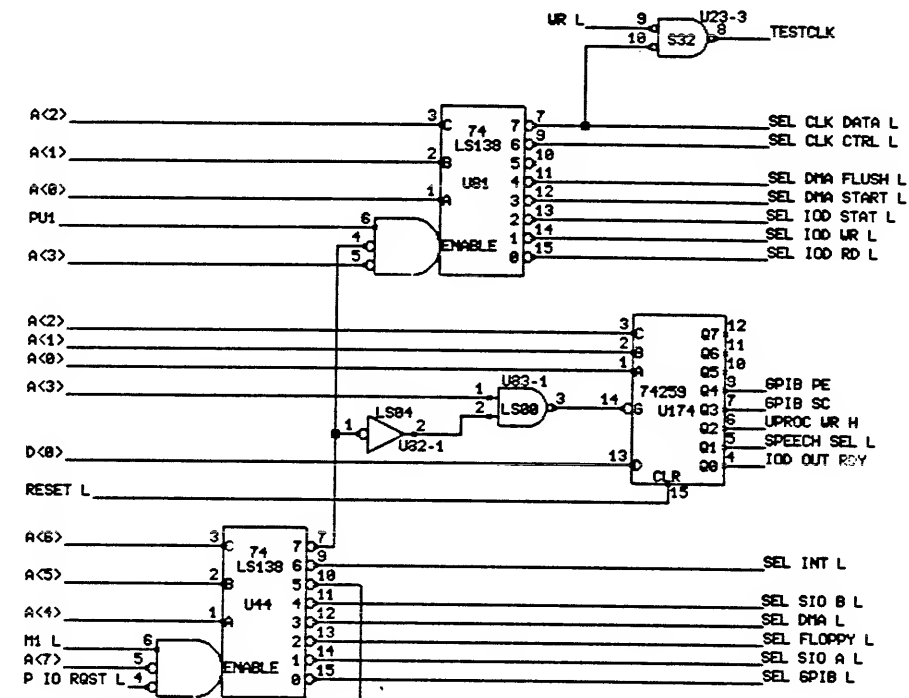
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PERQ

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UPDATED	STECK
APR/83/84	

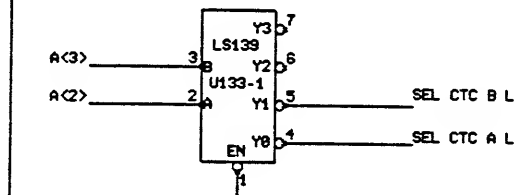
SIZE	CODE	IDENTIFICATION	VAR	REV
A	1 1	0 0 0 6 -	0 2	AN
PROJ : ETHERNET IO BOARD U/ETHERNET Version B				

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# SIGNAL ADDRESS

SEL CLK DATA L	167
SEL CLK CTRL L	166
SEL DMA FLUSH L	164
SEL DMA START L	163
SEL IOD STAT L	162
SEL IOD WR L	161
SEL IOD RD L	160
GPB PE	174
GPB SC	173
UPROC WR H	172
SPEECH SEL L	171
IOD OUT RDY	170
SEL INT L	140:157
SEL CTC A L	120:127
SEL CTC B L	130:137
SEL SIO B L	100:117
SEL DMA L	60:77
SEL FLOPPY L	40:57
SEL SIO A L	20:37
SEL GPB L	0:17



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TITLE

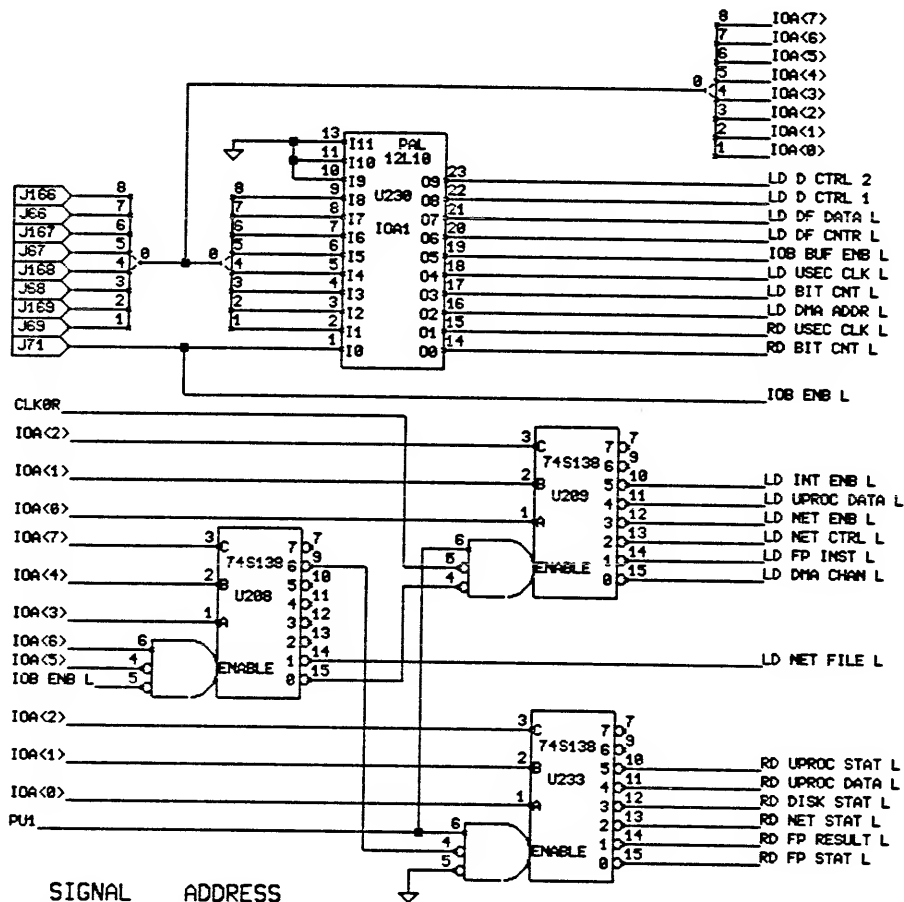
Z80 ADDRESS DECODE

e27.db

PERQ

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UPDATED	APR/83/84 STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
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PROJ : ETHERNET 10 BOARD U/ETHERNET Version B				
PAGE 27 OF 56				



SIGNAL	ADDRESS
LD USEC CLK L	334:336
LD BIT CNT L	330:332
LD DMA ADDR L	324:327
RD USEC CLK L	136:137
RD BIT CNT L	132:133
LD INT ENB L	305
LD UPROC DATA L	304
LD NET ENB L	303
LD NET CTRL L	302
LD FP INST L	301
LD DMA CHAN L	300
LD NET FILE L	310:317
RD UPROC STAT L	125
RD UPROC DATA L	124
RD DISK STAT L	123
RD NET STAT L	122
RD FP RESULT L	121
RD FP STAT L	120

SIGNAL	ADDRESS
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LD D CTRL 1	322
LD DF DATA L	321
LD DF CNTR L	320
IOB BUF ENB L	100:137 300:337

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e28.db

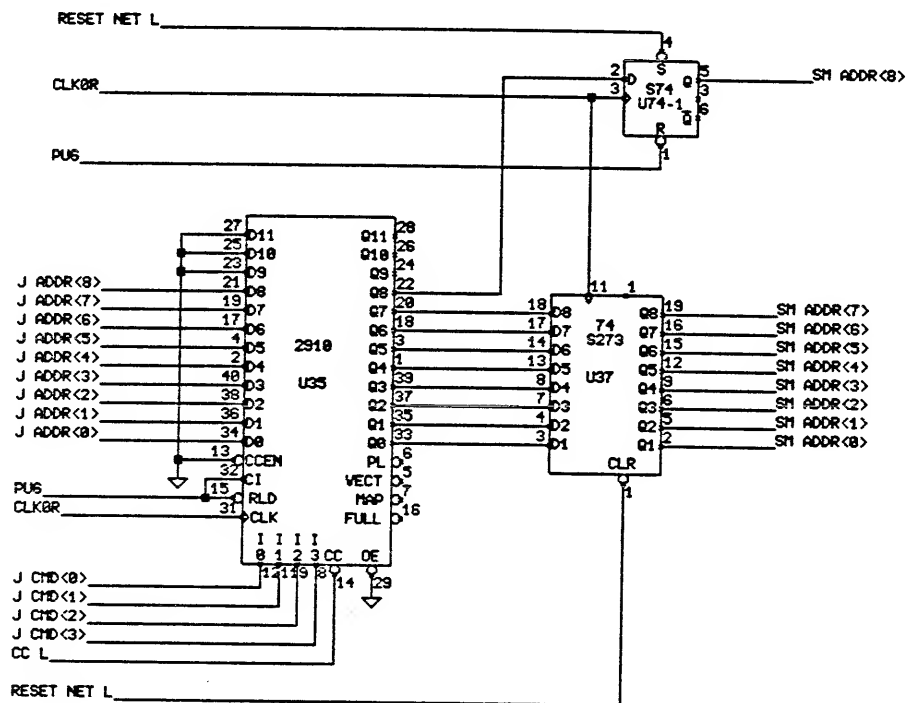
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DRAWN	13 Sep 82 16:45:01
UPDATED	APR/83/84

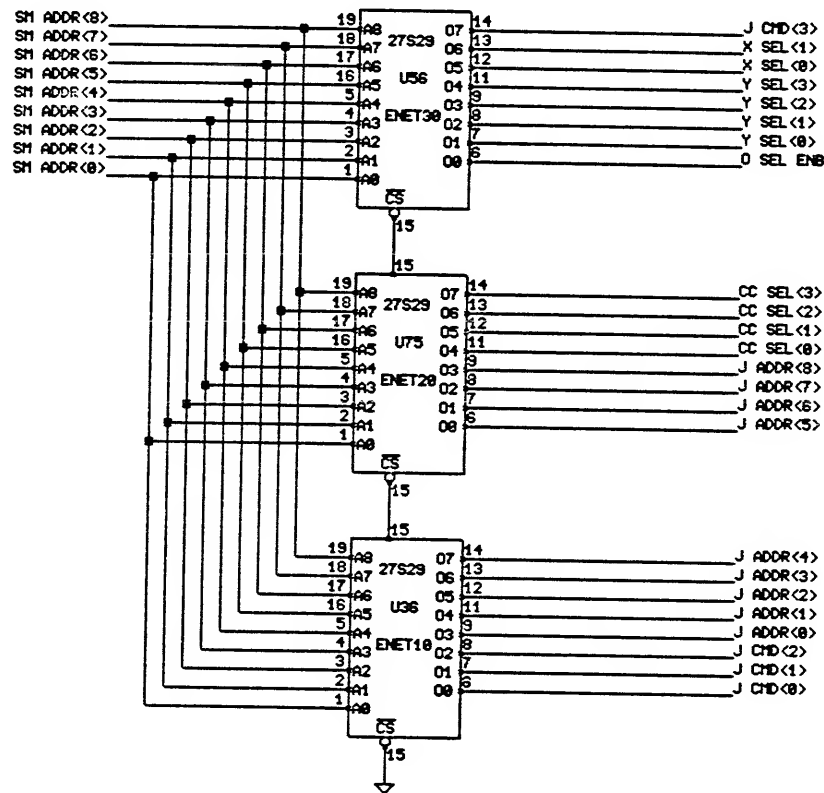
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PROJ :	ETHERNET IO BOARD U/ETHERNET Version B			

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TITLE

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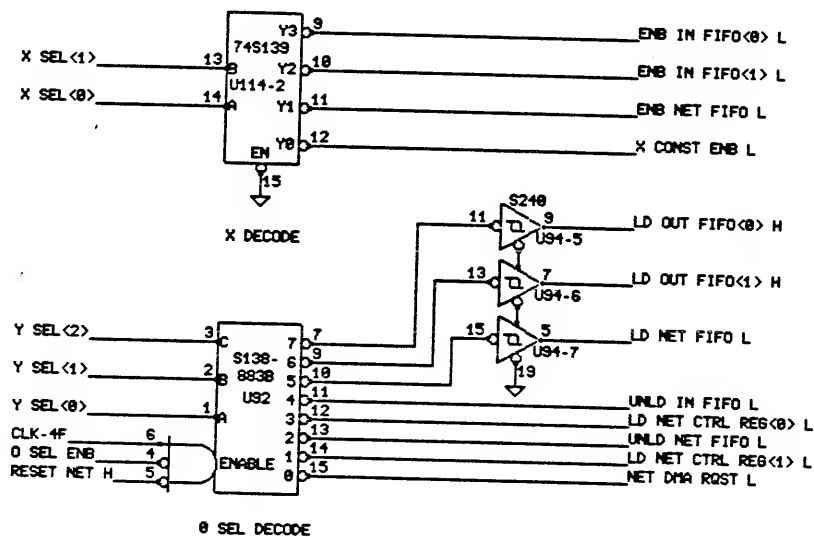
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SIZE	CODE	IDENTIFICATION	VAR	REV
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PROJ : ETHERNET IO BOARD W/ETHERNET Version B				

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TITLE

STATE MACHINE

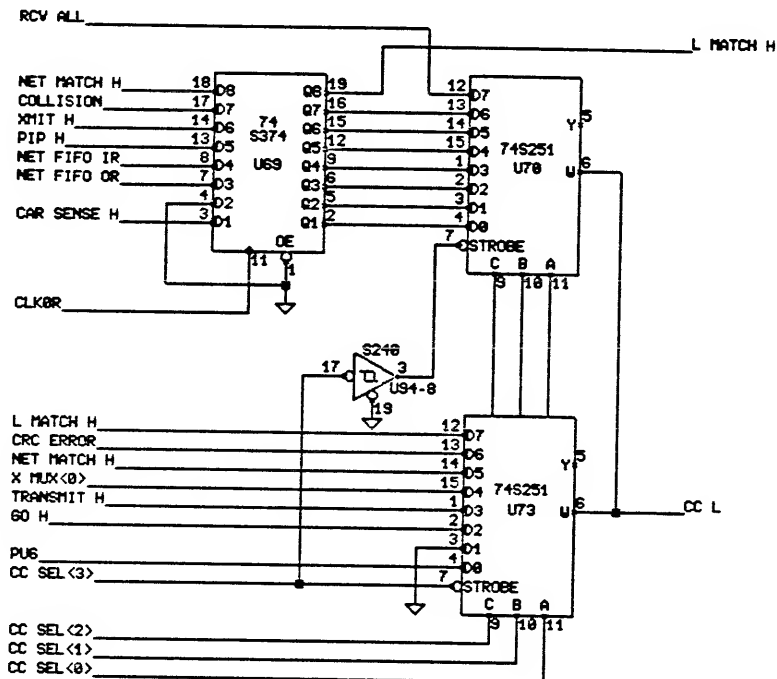
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PROJ : ETHERNET 10 BOARD W/ETHERNET Version B				

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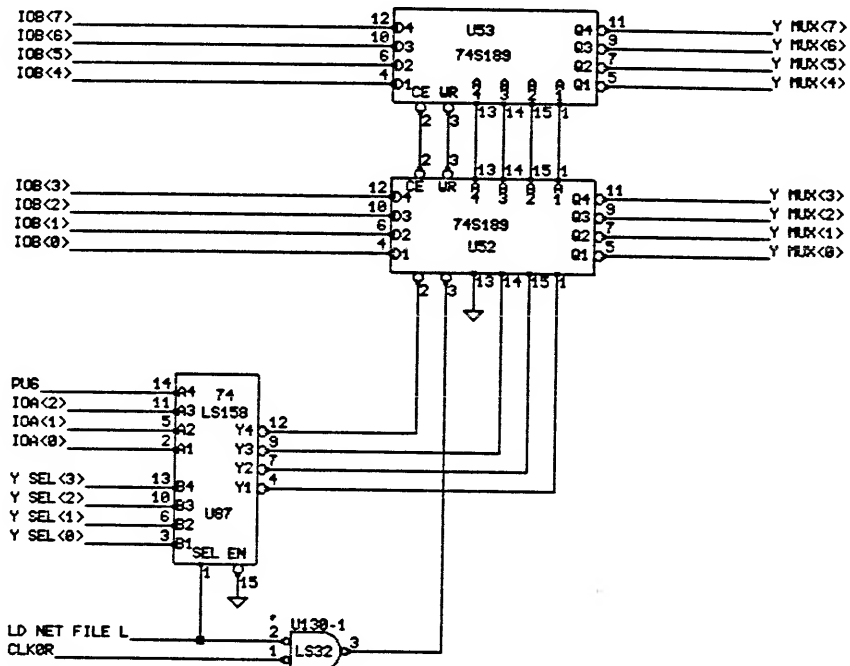
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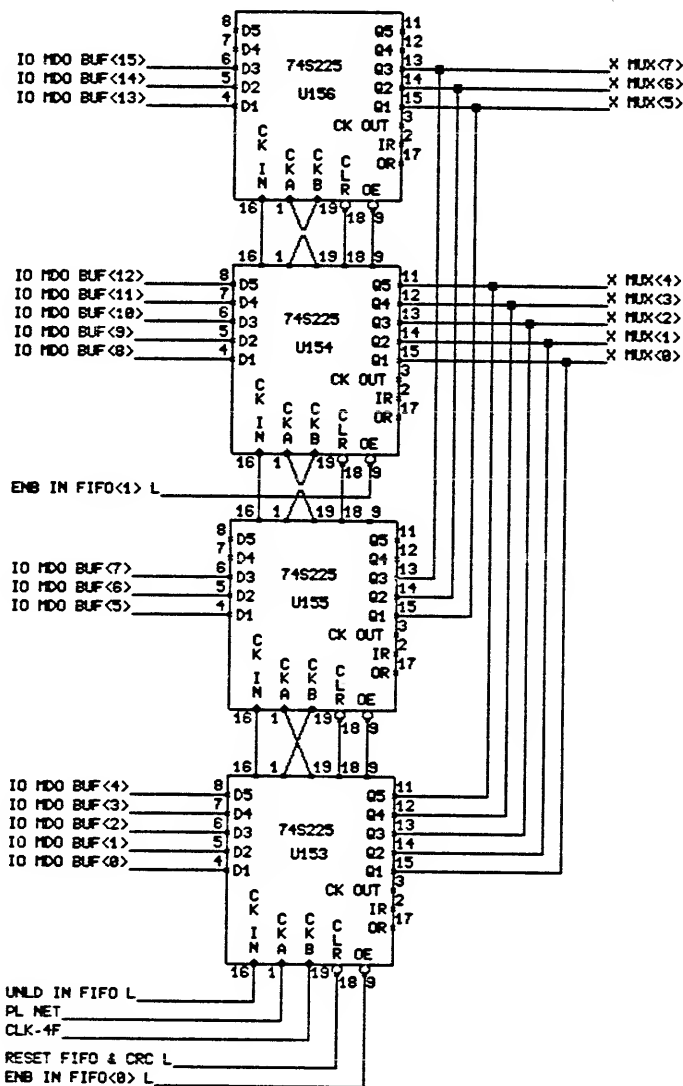
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PROJ :					ETHERNET IO BOARD W/ETHERNET					Version B		PAGE 34 OF 56				

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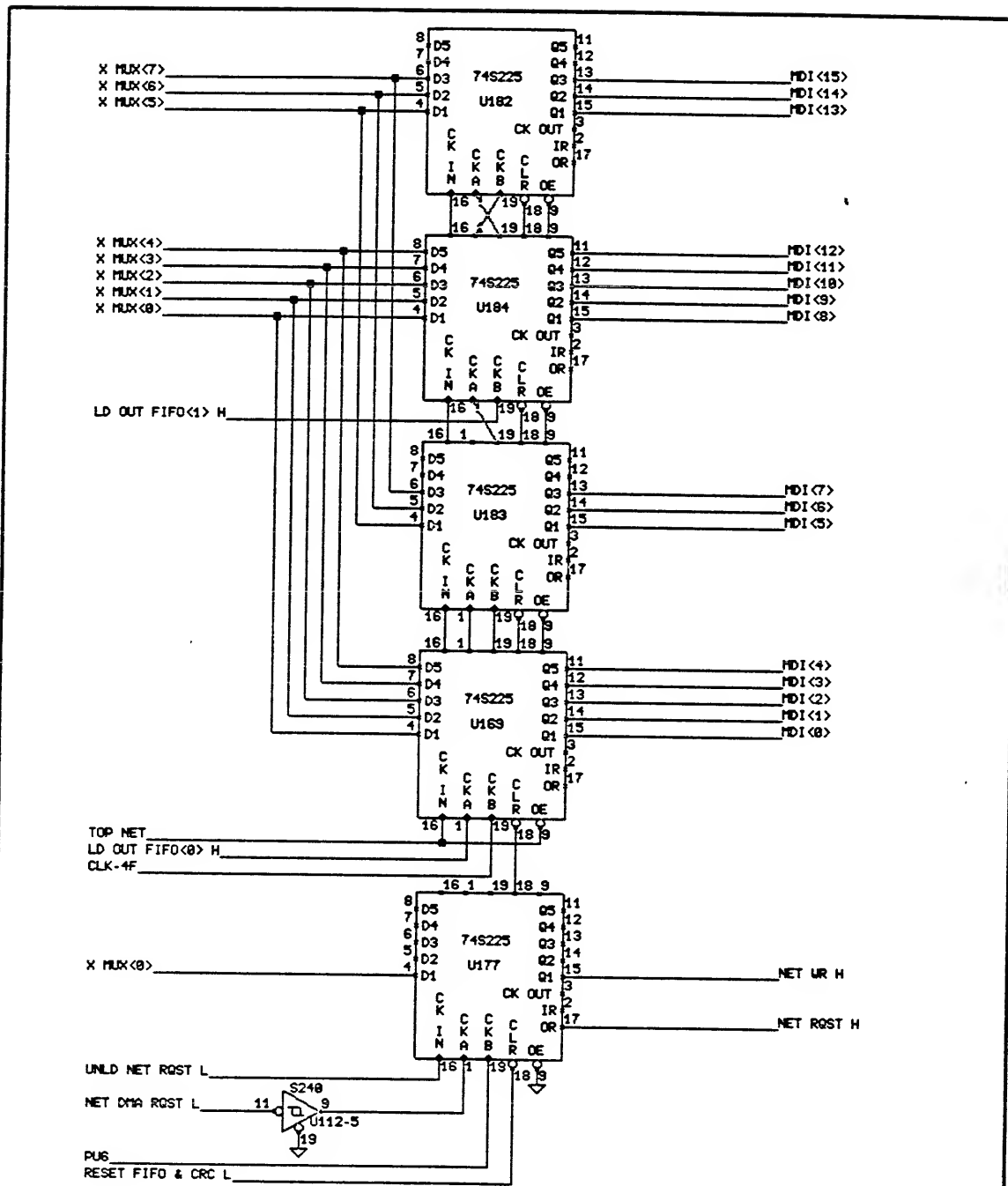
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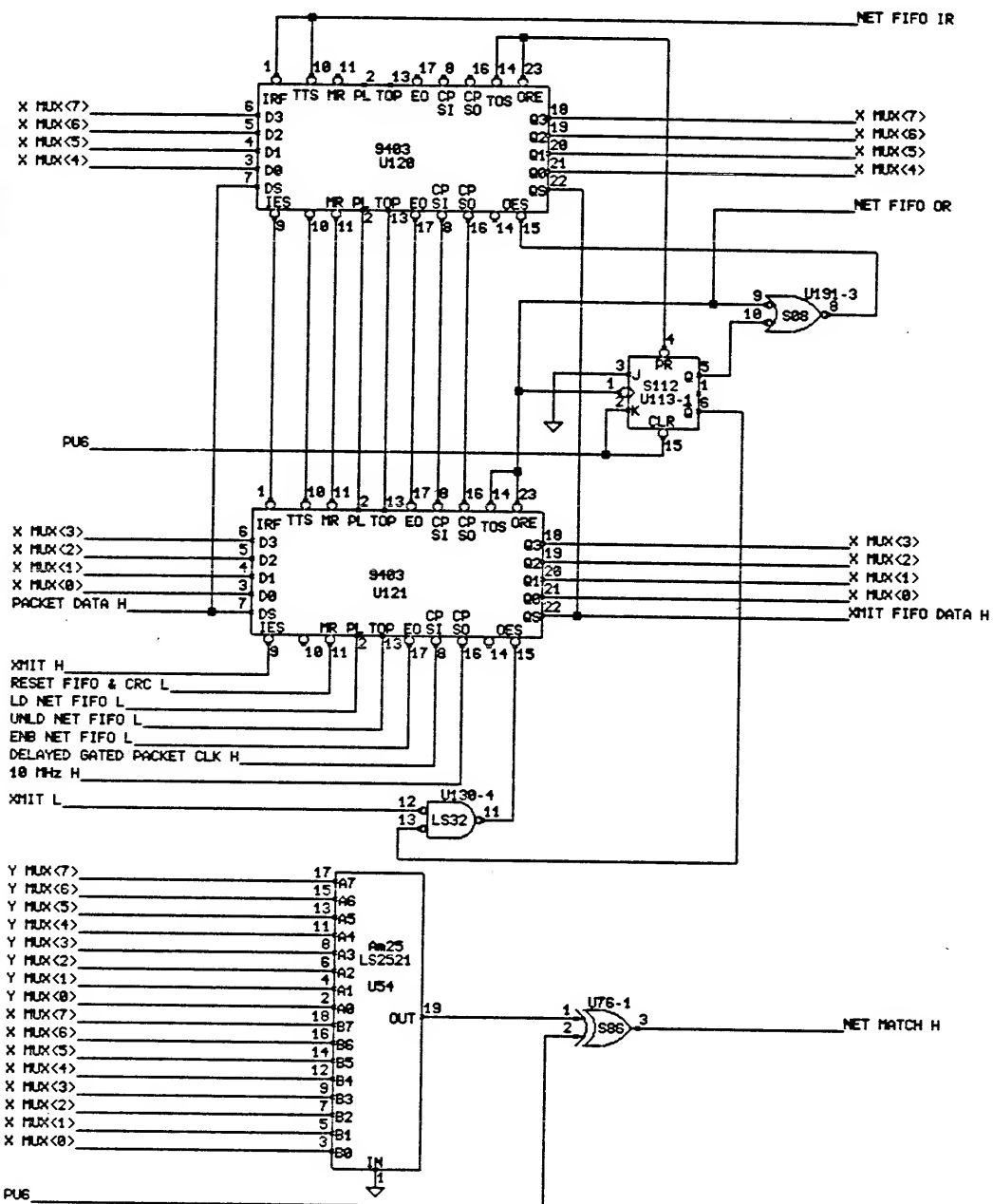
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B PAGE 35 OF 56



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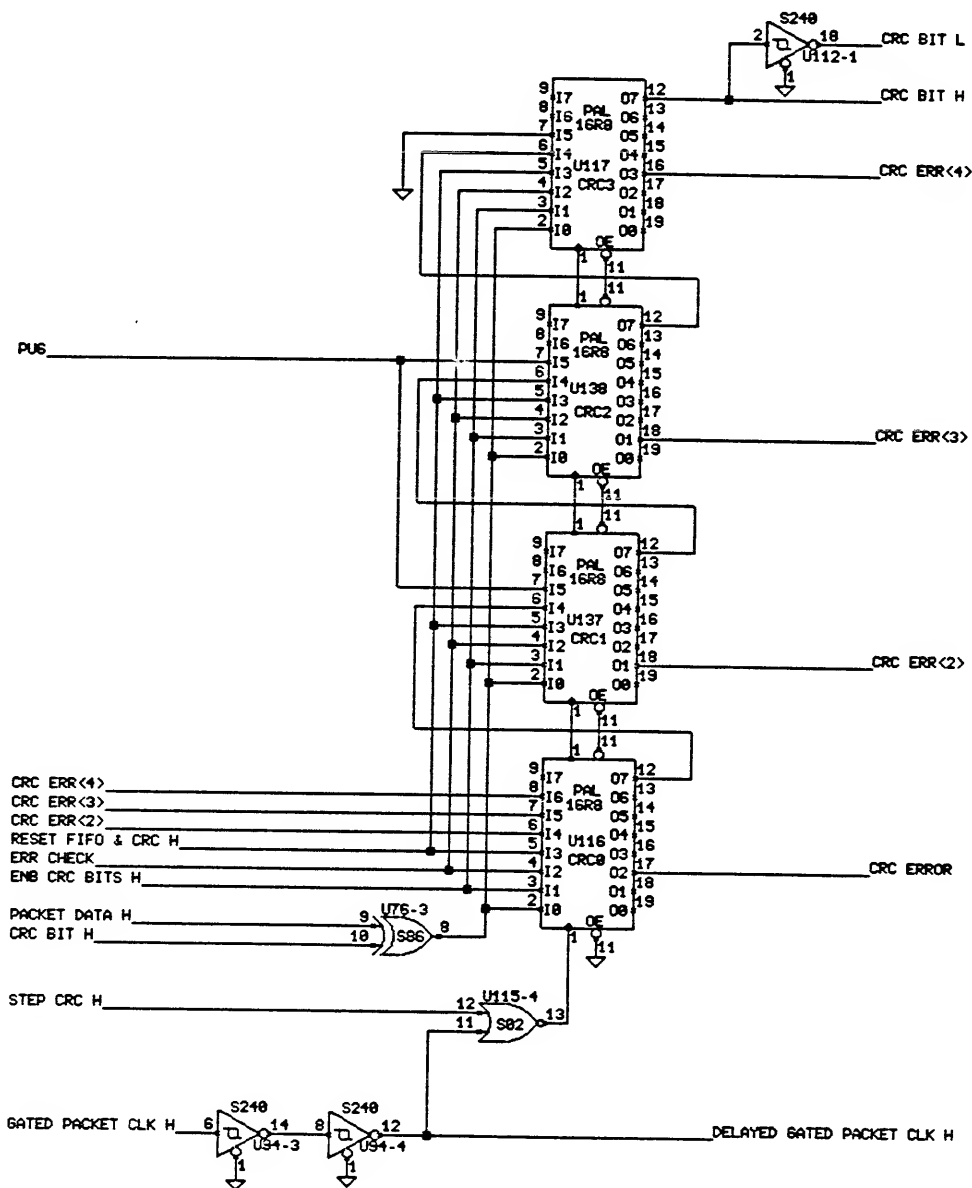




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TITLE  
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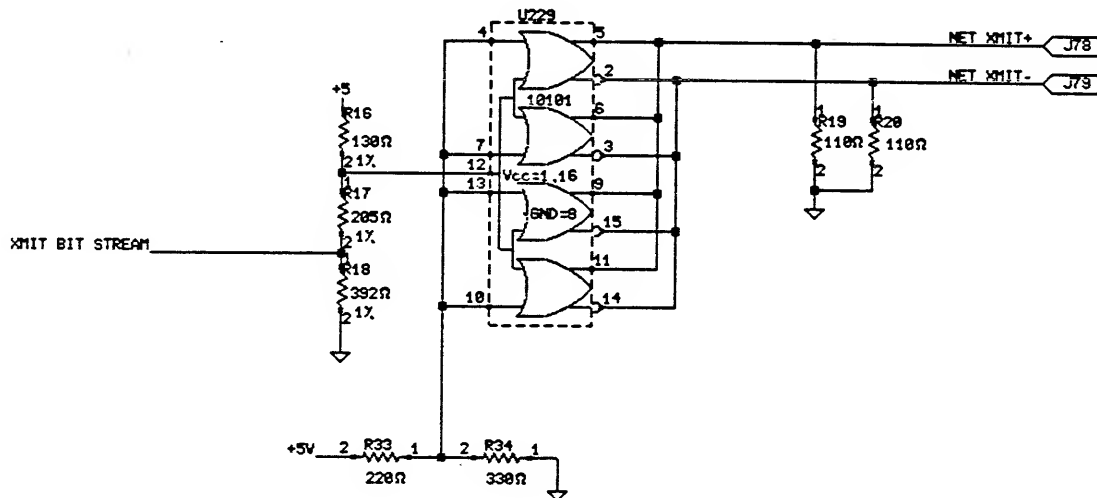
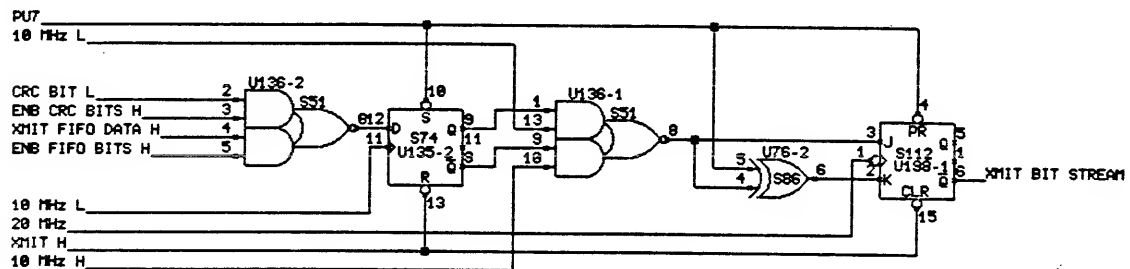
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UPDATED	APR/83/84 STECK

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PROJ : ETHERNET IO BOARD U/ETHERNET Version B PAGE 38 OF 56



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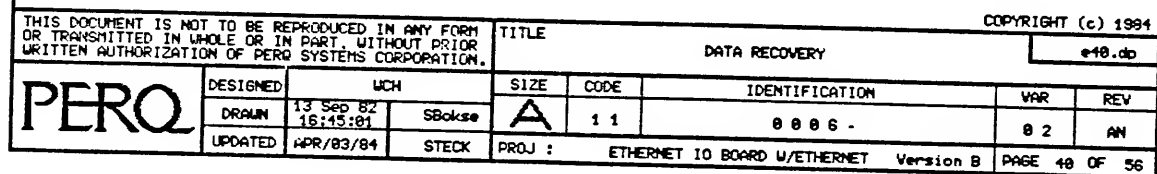
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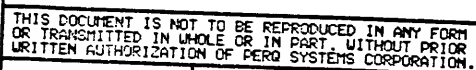
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PROJ : ETHERNET 10 BOARD U/ETHERNET Version B			PAGE 39 OF 56	





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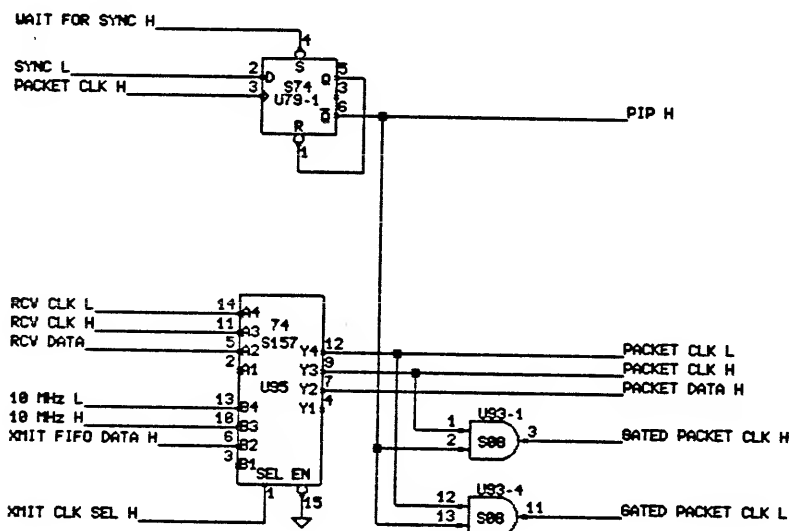
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TITLE

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e42.dp

**PERQ**

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UPDATED	APR/83/84 STECK

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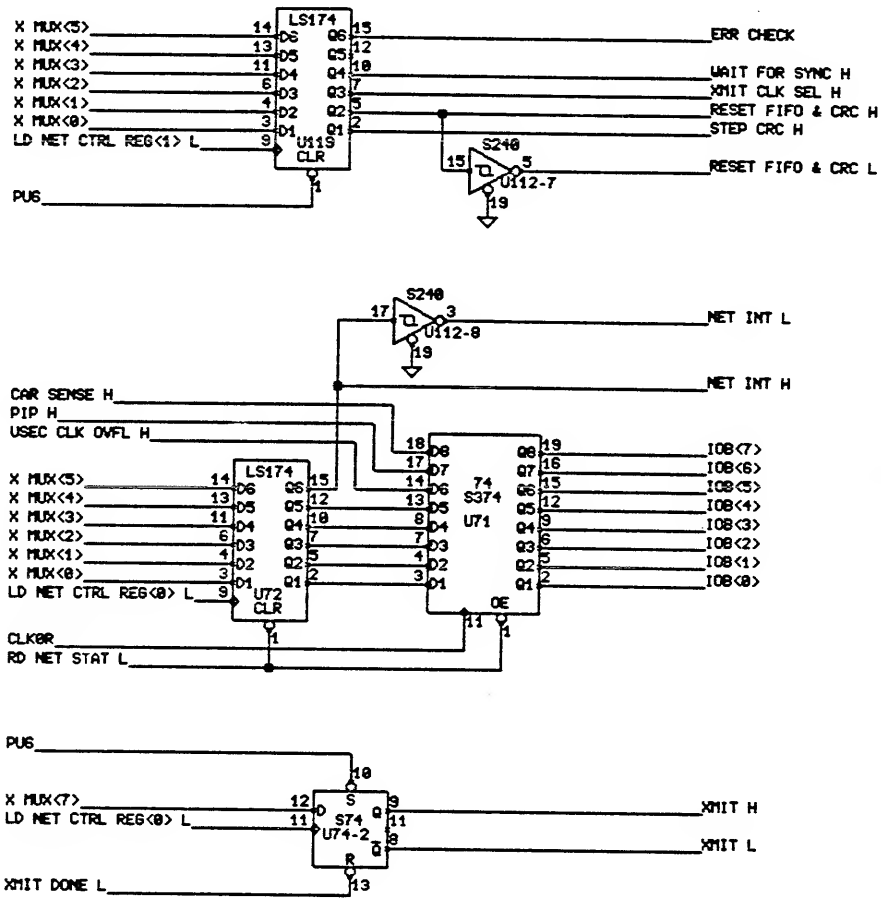
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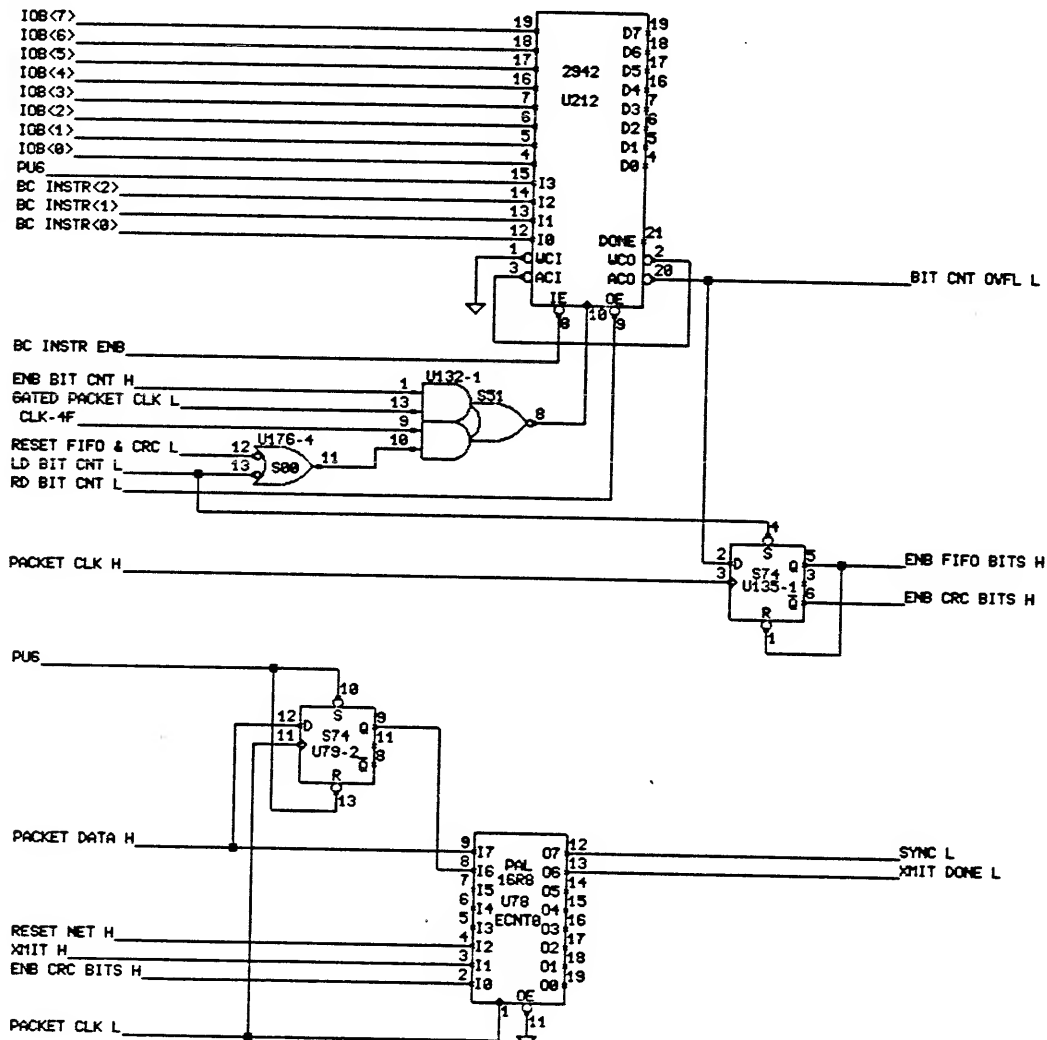
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B

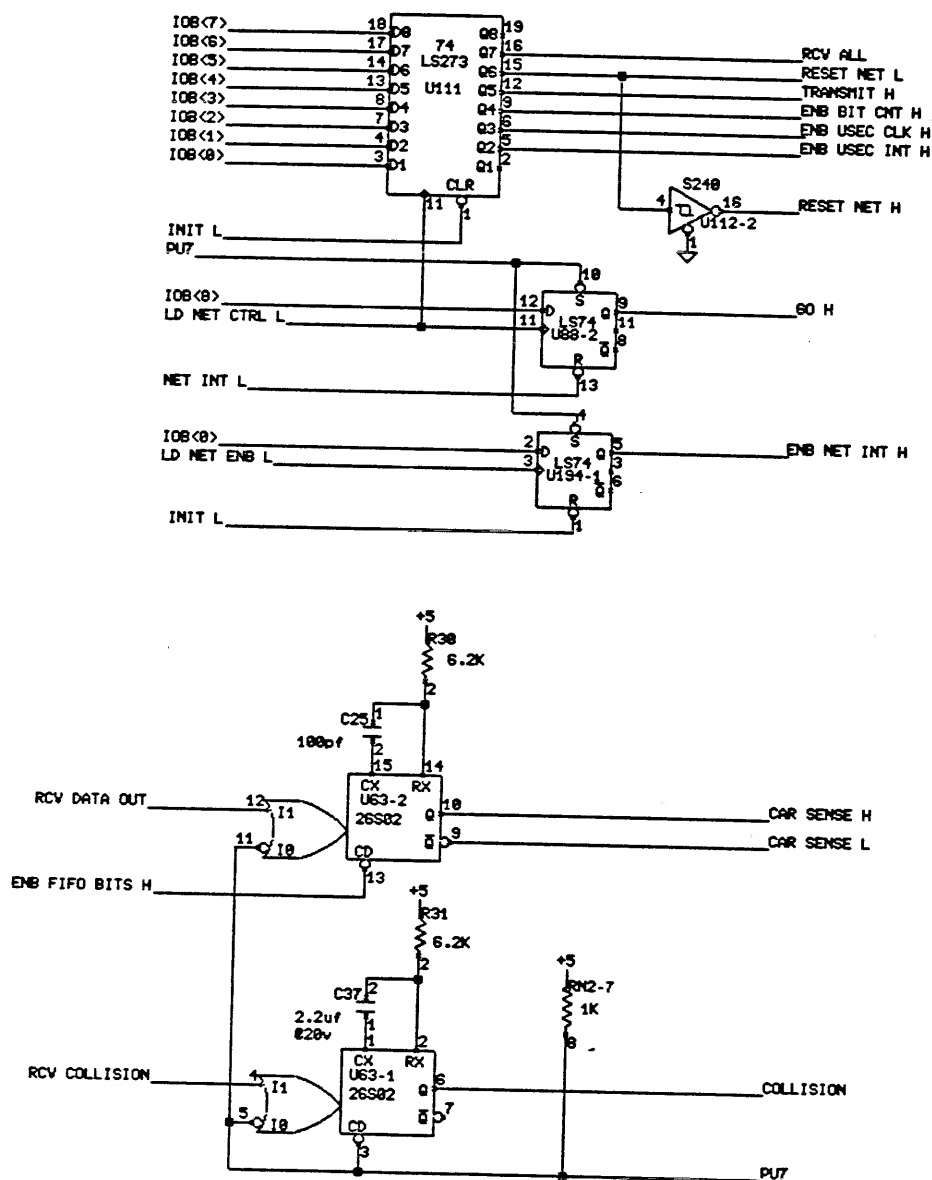
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	UPDATED	APR/83/84	STECK						
PROJ :				ETHERNET IO BOARD U/ETHERNET		REV B		PAGE 44 OF 56	





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TITLE

PERQ CONTROL REGISTER

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e15.db

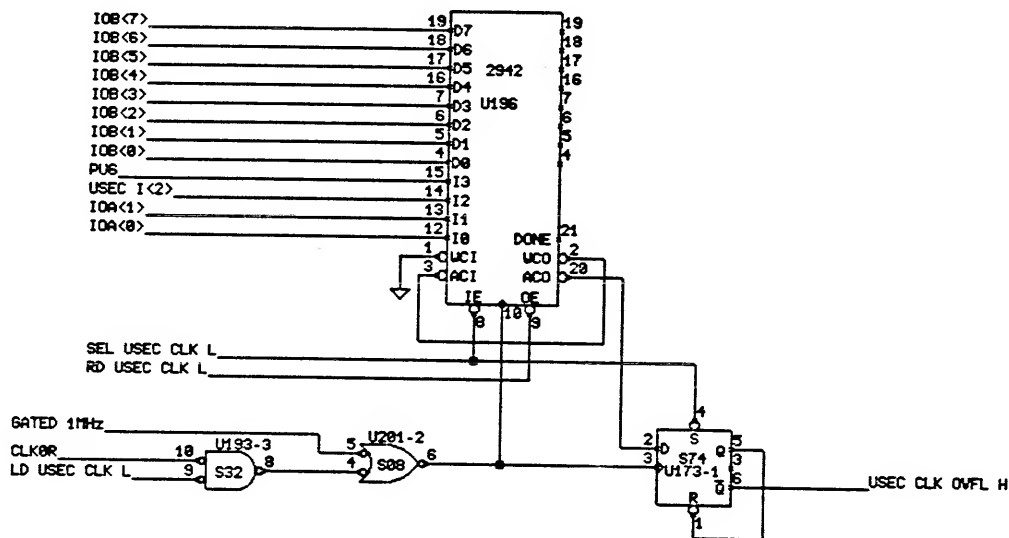
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B PAGE 45 OF 56



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TITLE  
MICROSECOND CLOCK

e46.dp

**PERQ**

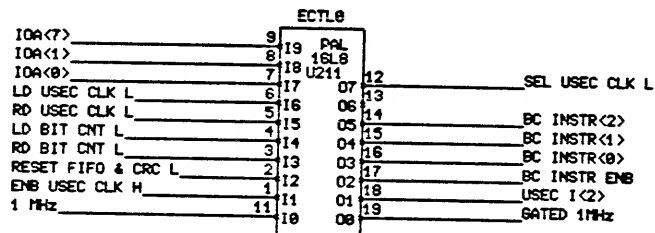
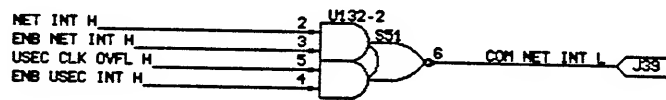
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B

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TITLE

NET CONTROLLER

e47.dp

**PERQ**

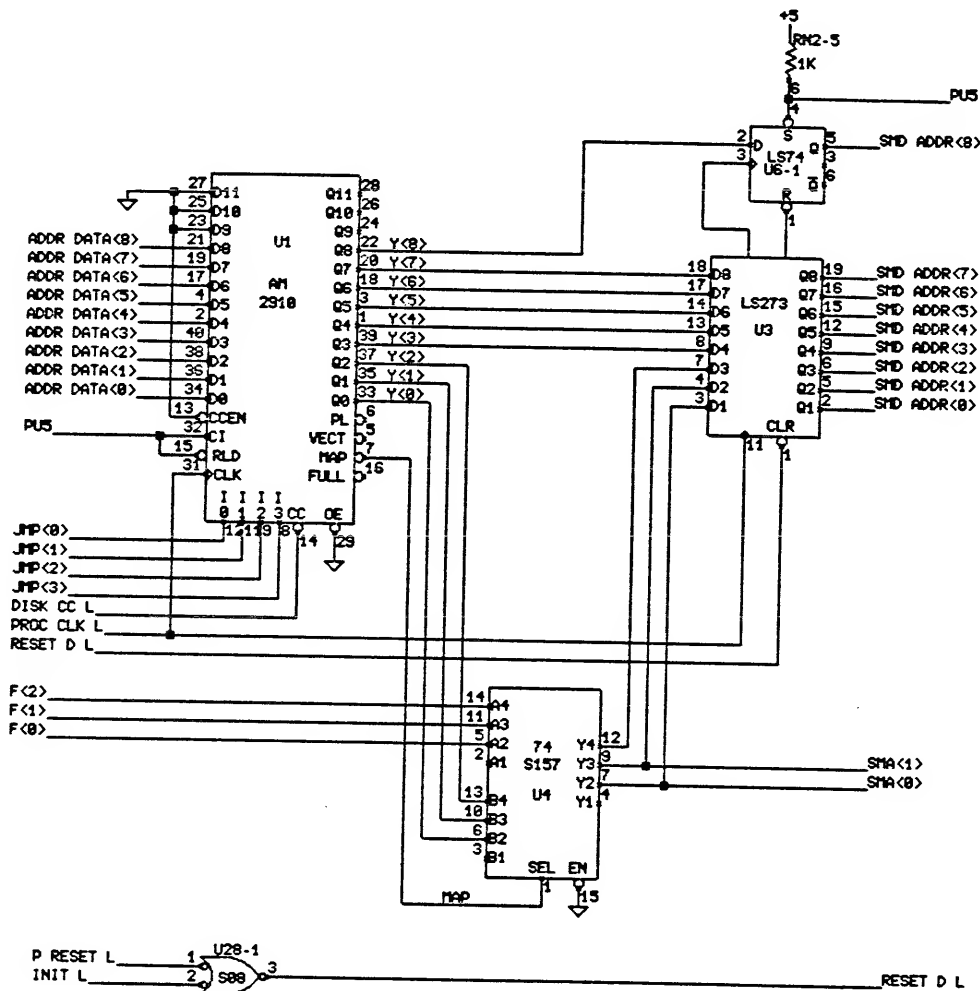
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B

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TITLE

DISK STATE MACHINE

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e48.dp

**PERQ**

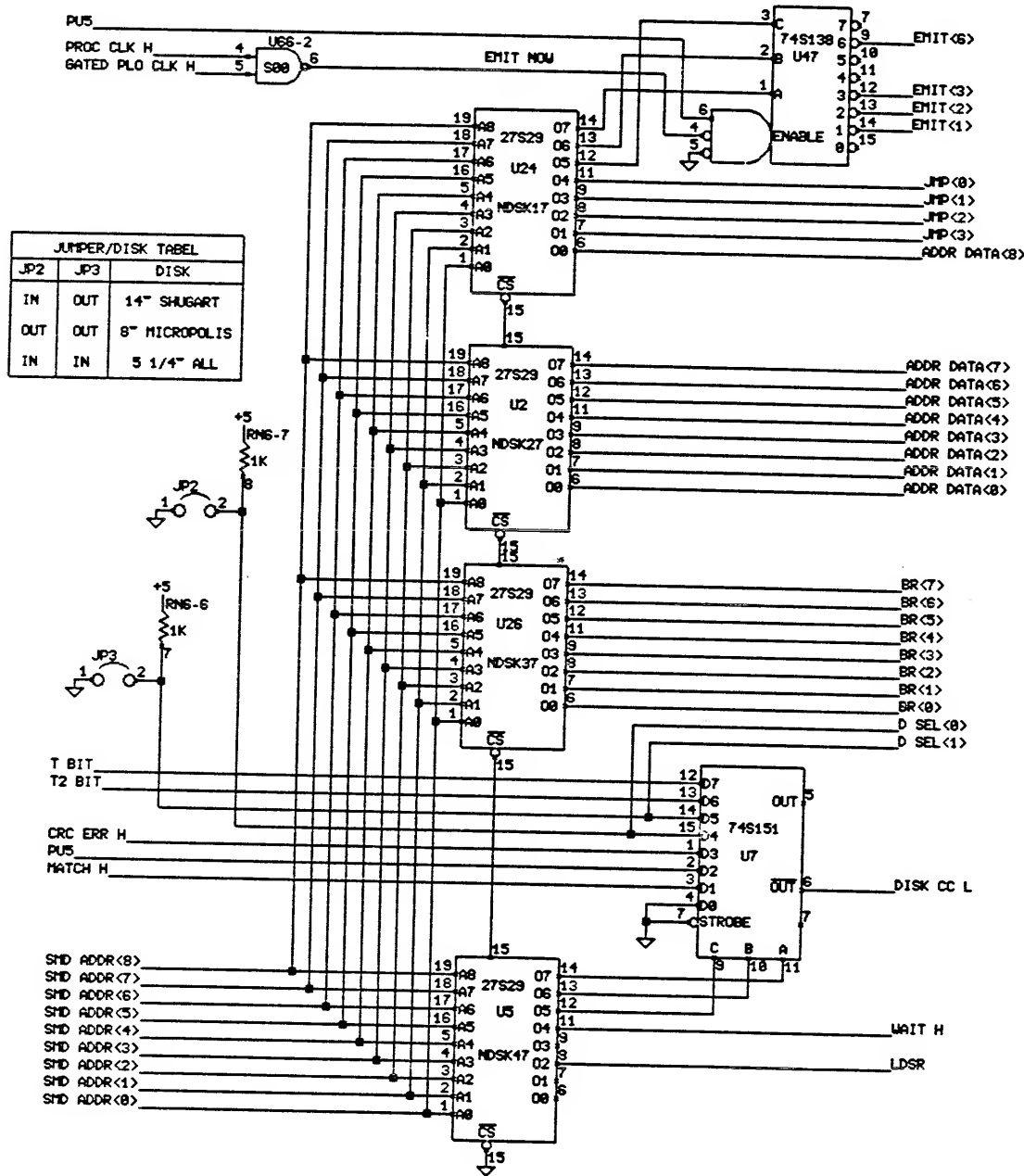
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B

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TITLE

DISK STATE MACHINE

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e49.db

**PERQ**

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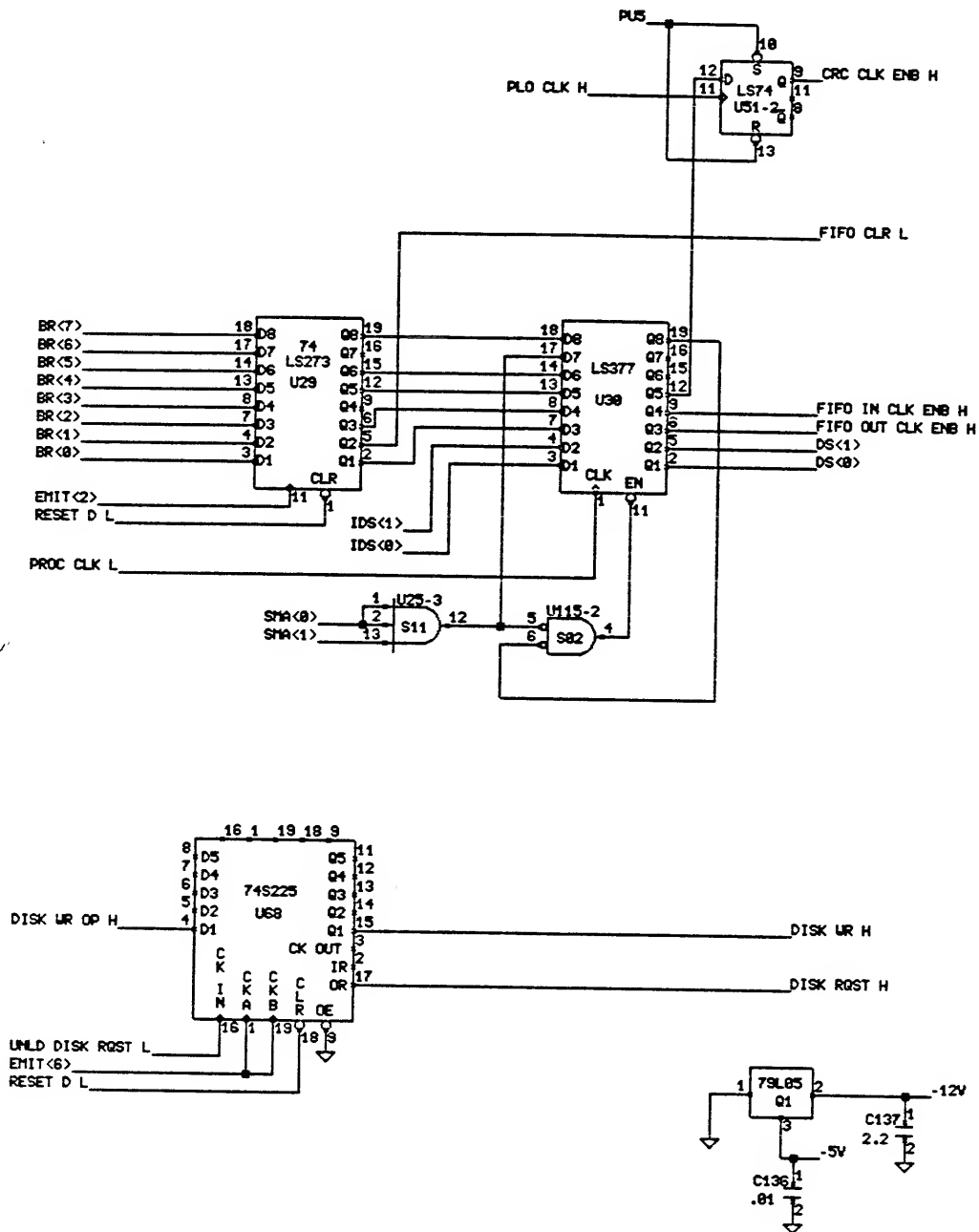
ETHERNET IO BOARD W/ETHERNET Version 8

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PROJ :	ETHERNET 10 BOARD U/ETHERNET	Version B	PAGE 51 OF 56
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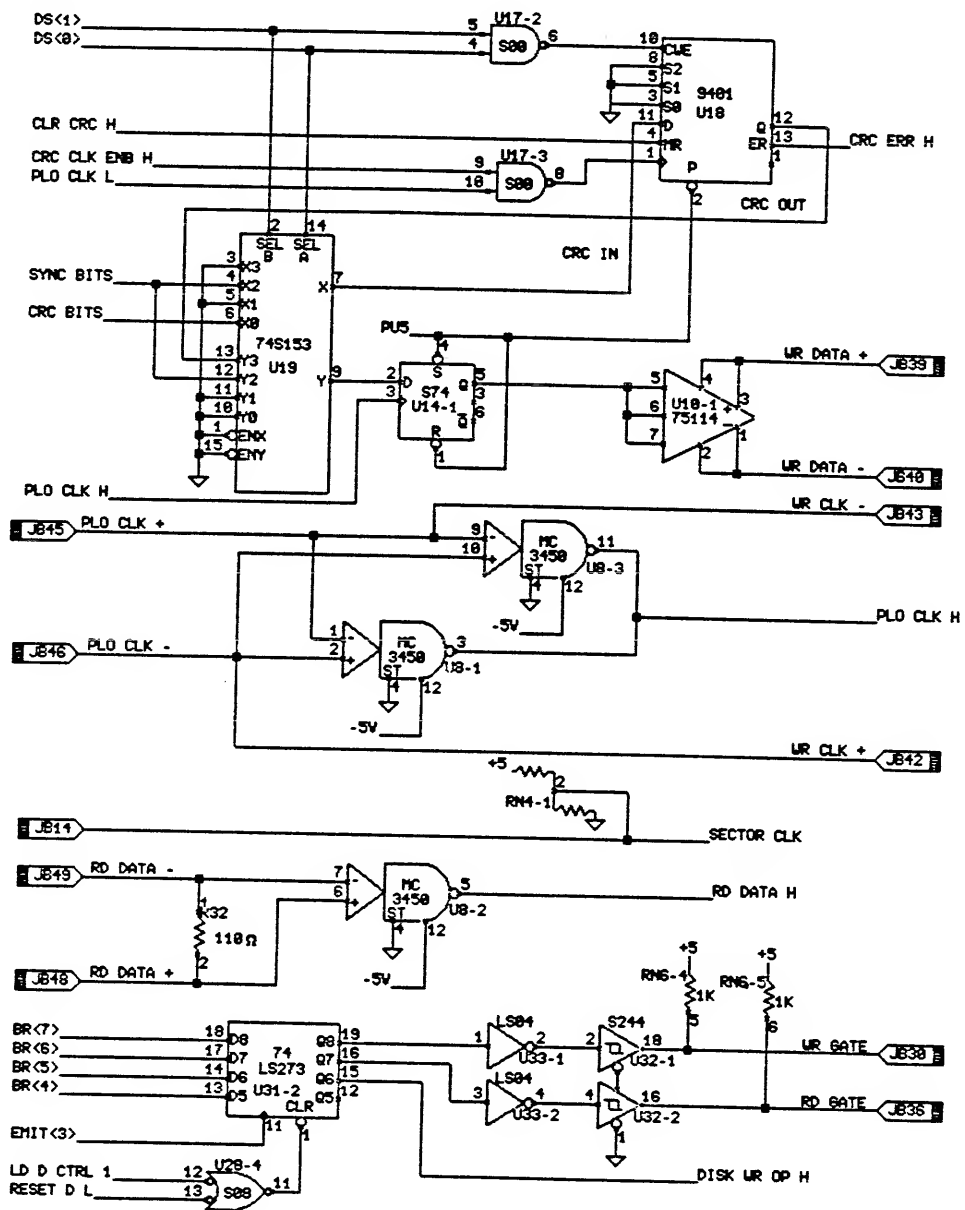
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	UPDATED	APR/83/84	STECK	PROJ :	ETHERNET IO BOARD U/ETHERNET	Version 8	PAGE 52 OF 56





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TITLE

DISK INYERFACE

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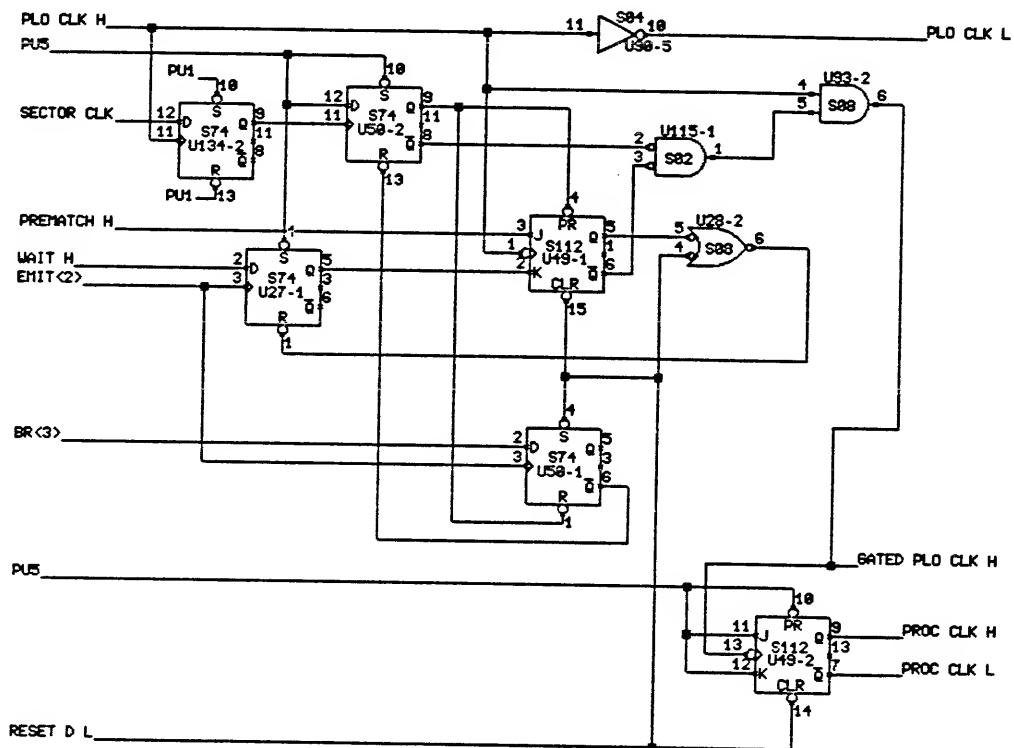
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PROJ : ETHERNET IO BOARD U/ETHERNET Version B				

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TITLE

DISK CLOCK

e54.db

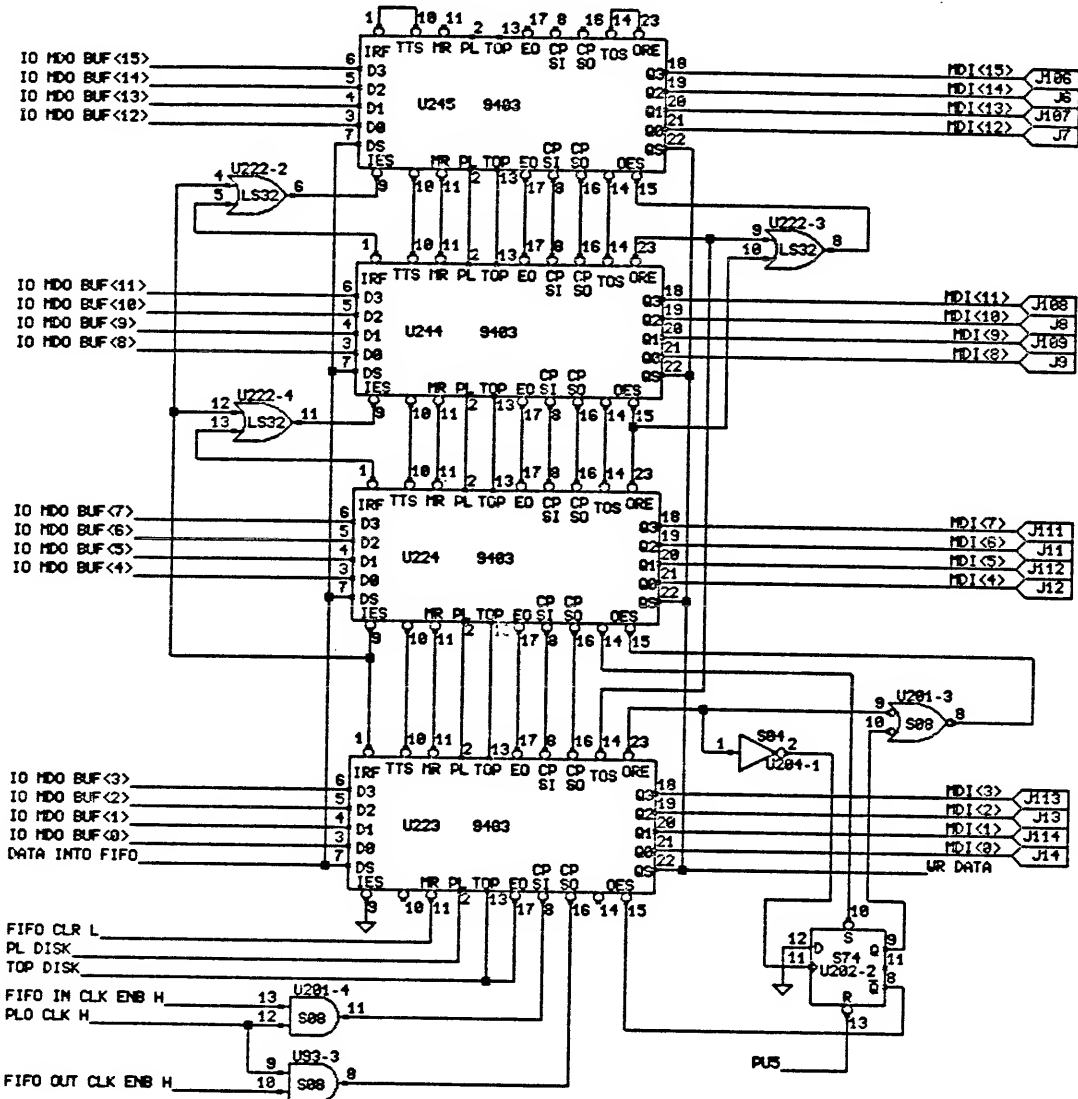
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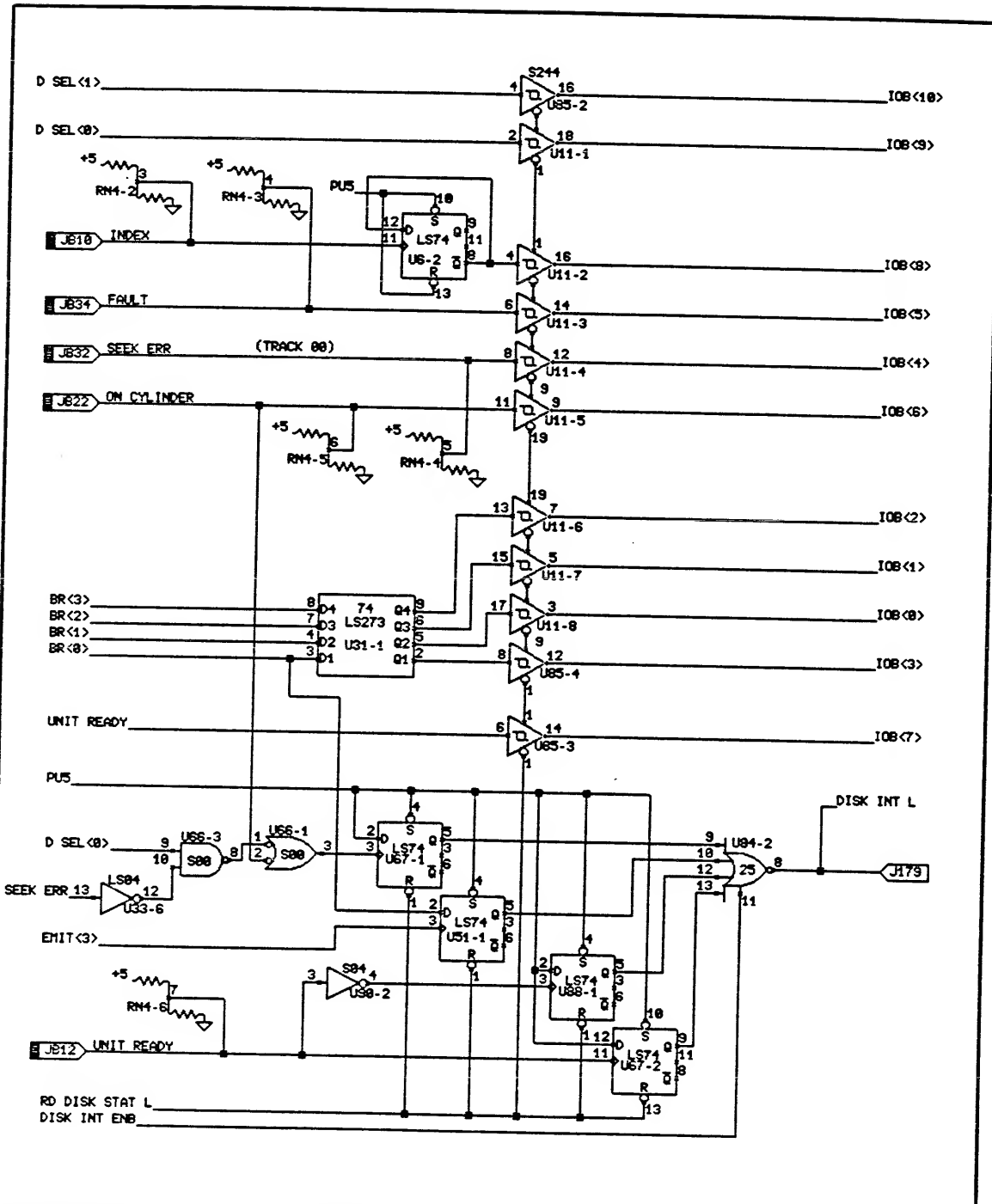
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TITLE				DISK STATUS			
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				PAGE 56 OF 56			

18 Jan 85 17:10:36

Using Files: E01.WL to E56.WL

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S CLK 3.....	5	3
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SEL IOD RD L.....	27	9
SEL IOD STAT L.....	27	9
SEL IOD WR L.....	27	8
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SEL SIO B L.....	27	16
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SIO ACK L.....	15	14
SIO INT ENB.....	16	15
SIO RQST L.....	15	14
SM ADDR<0>.....	30	29
SM ADDR<1>.....	30	29
SM ADDR<2>.....	30	29
SM ADDR<3>.....	30	29
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SM ADDR<8>.....	30	29
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SMA<1>.....	52	48
SMD ADDR<0>.....	49	48
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SMD ADDR<3>.....	49	48
SMD ADDR<4>.....	49	48
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SMD ADDR<6>.....	49	48
SMD ADDR<7>.....	49	48
SMD ADDR<8>.....	49	48
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SPEAKER.....	20	
SPEECH CLK.....	20	15
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SPEECH SEL L.....	27	15
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TABLET DATA L.....	15	
TC IN B.....	16	
TESTCLK.....	27	21
TOP DISK.....	55	3
TOP EXT A L.....	3	
TOP EXT B L.....	3	
TOP NET.....	36	3
TOP UPROC.....	10	3
TRANSMIT H.....	45	32
TZ CLK.....	17	16 15 14 13 12 9 7
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UNIT SEL L.....	19	18
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UNLD EXT A RQST L.....	5	3
UNLD EXT B RQST L.....	3	
UNLD IN FIFO L.....	35	31
UNLD NET FIFO L.....	37	31
UNLD NET RQST L.....	36	3
UNLD UPROC RQST L.....	7	3
UPROC ENB.....	24	8
UPROC INT L.....	8	
UPROC RDY.....	9	8
UPROC RDY ENB.....	24	9
UPROC RDY INT L.....	9	
UPROC RQST H.....	7	2
UPROC WR H.....	27	7 2
USEC CLK OVFL H.....	47	46 43
USEC I<2>.....	47	46
WA<1>.....	4	3
WA<2>.....	4	3
WA<3>.....	4	3
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WAIT H.....	54	49
WCLK.....	25	18
WCNT L.....	5	4
WHI L.....	6	5
WLO L.....	6	5
WR CLK +.....	53	
WR CLK -.....	53	
WR DATA.....	55	50
WR DATA +.....	53	
WR DATA -.....	53	
WR GATE.....	53	
WR L.....	27	26 18 17 16 15 13 12 7
WREG L.....	5	4
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X MUX<0>.....	43	37 36 35 33 32
X MUX<1>.....	43	37 36 35 33
X MUX<2>.....	43	37 36 35 33

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X MUX<3>.....43 37 36 35 33
X MUX<4>.....43 37 36 35 33
X MUX<5>.....43 37 36 35 33
X MUX<6>.....37 36 35 33
X MUX<7>.....43 37 36 35 33
X SEL<0>.....31 30
X SEL<1>.....31 30
XMIT BIT STREAM.....39
XMIT CLK SEL H.....43 42
XMIT DONE L.....44 43
XMIT FIFO DATA H.....42 39 37
XMIT H.....44 43 39 37 32
XMIT L.....43 37
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Y MUX<1>.....37 34 33
Y MUX<2>.....37 34 33
Y MUX<3>.....37 34 33
Y MUX<4>.....37 34 33
Y MUX<5>.....37 34 33
Y MUX<6>.....37 34 33
Y MUX<7>.....37 34 33
Y SEL<0>.....34 31 30
Y SEL<1>.....34 31 30
Y SEL<2>.....34 31 30
Y SEL<3>.....34 33 30
Z CLK.....16 15 12
Z80 INT L.....16 15 13 12
Z80 WAIT L.....14 12

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This Run Was made using the following files:

110006.PART

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e55.WL  
e54.WL  
e53.WL  
e52.WL  
e51.WL  
e50.WL  
e49.WL  
e48.WL  
e47.WL  
e46.WL  
e45.WL  
e44.WL  
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e16.WL  
e15.WL  
e14.WL  
e13.WL  
e12.WL  
e11.WL  
e10.WL  
e09.WL  
e08.WL

e07.WL  
e06.WL  
e05.WL  
e04.WL  
e03.WL  
e02.WL  
e01.WL

Number Of Nets = 1077  
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1: U181-5 U109-19 U181-4 U109-15 U148-11  
1: U164-15 U163-7 U149-3 U149-12 U150-13  
1: U218-12 U217-12 U215-2 U217-1 U236-13  
1: U216-15 U217-2 U220-12 U221-12 U219-12  
1: U123-4 U123-5 U123-6 U146-15 U146-3  
1: U146-13 U146-2 U65-1 U46-1 U126-24  
1: U126-25 C103-2 U158-22 U143-1 U143-15  
1: U143-4 U158-23 U157-22 U157-23 U22-3  
1: U22-1 U15-19 U16-19 U86-6 JA43-1  
1: JA41-1 JA39-1 JA37-1 JA35-1 JA33-1  
1: JA31-1 JA29-1 JA3-1 JA1-1 JA5-1 JA7-1  
1: JA9-1 JA25-1 JA23-1 JA21-1 JA19-1  
1: JA17-1 JA15-1 JA13-1 JA11-1 JA27-1  
1: JA45-1 JA47-1 JA49-1 C139-2 C159-2  
1: U225-15 U225-2 R7-2 C121-2 R13-2  
1: U227-6 U187-15 R12-2 U227-7 U227-12  
1: U227-11 U227-10 U227-5 U227-4 U227-3  
1: U225-1 U225-13 C36-1 B1-2 C35-1 U168-1  
1: U242-1 U243-1 U161-1 U175-7 U108-4  
1: U175-12 U175-14 U175-11 U175-5 U175-4  
1: U175-3 U108-3 U122-22 U233-5 U230-13  
1: U230-11 U230-10 U35-13 U35-23 U35-25  
1: U35-27 U35-29 U36-15 U56-15 U75-15  
1: U114-15 U94-19 U73-3 U69-1 U69-4  
1: U53-13 U52-13 U87-15 U177-9 U54-1  
1: U113-3 U117-7 U116-11 U137-11 U138-11  
1: U117-11 R19-2 R34-1 R18-2 R20-2 C158-2  
1: C155-2 U198-11 U94-1 U95-15 U112-19  
1: U78-11 U212-1 U196-1 U1-27 U4-15  
1: U1-29 U1-25 U1-23 U1-13 JP2-1 JP3-1  
1: U47-5 U7-7 U7-4 U5-15 U26-15 U2-15  
1: U24-15 U39-1 U34-1 U77-5 U58-15 U59-2  
1: U60-2 U40-6 U77-4 U112-1 U12-1 U12-19  
1: JB33-1 JB35-1 JB37-1 JB38-1 JB1-1  
1: JB3-1 JB5-1 JB7-1 JB9-1 JB11-1 JB13-1  
1: JB15-1 JB17-1 JB19-1 JB21-1 JB23-1  
1: JB25-1 JB27-1 JB29-1 JB31-1 JB41-1  
1: JB44-1 JB47-1 JB50-1 C137-2 C136-2

1: Q1-1 U68-9 U32-1 U8-4 U19-5 U18-3  
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 5: U227-8 C126-1 .%C126-1  
 6: U227-1 C139-1 .%C139-1  
 7: R8-1 U187-7 C124-1 C153-1 .%C153-1  
 8: U63-15 C25-2 .%C25-2  
 9: R35-1 D2-1 .%D2-1  
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 11: U187-11 R9-1 R10-2 .%R10-2  
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 19: C25-1 U63-14 R30-2 .%R30-2  
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 28: U4-13 U1-37 .%U1-37  
 29: U10-5 U14-5 U10-6 U10-7 .%U10-7  
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 31: U210-9 U210-3 U210-4 U210-5 U210-10  
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 31: U151-11 U151-2 U151-3 U151-10 U151-15  
 31: U175-9 U108-1 U210-1 U108-10 U108-7  
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65: U124-8 U128-2	.%U128-2
66: U145-16 U128-4	.%U128-4
67: U12-13 U13-12	.%U13-12
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82: U215-11 U42-4 U134-3	.%U134-3
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84: U135-9 U136-1	.%U136-1
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90: U19-9 U14-2	.%U14-2
91: RN8-3 U144-17	.%U144-17
92: U33-11 U145-14	.%U145-14
93: U15-9 U145-17	.%U145-17
94: U21-1 U16-15 U145-25	.%U145-25
95: U15-17 U145-27	.%U145-27
96: U21-13 U145-30	.%U145-30
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98: U15-18 U16-18 U145-34	.%U145-34
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102: U131-13 U145-39	.%U145-39
103: U238-1 U237-2 U147-21	.%U147-21
104: U25-6 U148-7	.%U148-7
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107: U150-3 U149-11	.%U149-11
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113: U145-36 U15-15	.%U15-15
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122: U192-3 U158-13	.%U158-13
123: U207-9 U158-16	.%U158-16
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129: U172-11 U158-35	.%U158-35
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130:	.%U159-13
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133: U160-14 RN1-5 U160-11 U160-16	.%U160-16
134: R5-2 U161-16	.%U161-16
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136: U234-13 U162-8	.%U162-8
137: U148-16 U163-1	.%U163-1
138: U179-7 U164-6 U163-10	.%U163-10
139: U179-4 U164-3 U163-11	.%U163-11
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144: U148-18 U163-3	.%U163-3
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154: U196-10 U201-6 U173-3	.%U173-3
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168: RN9-8 U188-9	.%U188-9
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171: U157-17 U189-9	.%U189-9
172: U192-2 U190-11	.%U190-11
173: RN9-6 U190-5	.%U190-5
174: U113-5 U191-10	.%U191-10
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176: U199-15 U191-13	.%U191-13

177: U215-6 U191-5	.%U191-5
178: U120-15 U191-8	.%U191-8
179: U159-10 U192-1	.%U192-1
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202: U200-11 U201-1	.%U201-1

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205: U245-23 U245-14 U244-14 U224-14 U202-10	
205:	.%U202-10
206: U204-2 U202-11	.%U202-11
207: U176-1 U202-6	.%U202-6
208: U223-15 U202-8	.%U202-8
209: U201-10 U202-9	.%U202-9
210: U128-8 U203-10	.%U203-10
211: U204-3 U203-11	.%U203-11
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213: U203-12 U204-5	.%U204-5
214: U203-9 U204-9	.%U204-9
215: RN9-10 U205-12	.%U205-12
216: R29-1 C155-1 U226-6 U206-6	.%U206-6
217: R22-1 U206-9	.%U206-9
218: U193-6 U158-14 U207-13	.%U207-13
219: U158-15 U207-2	.%U207-2
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222: U208-15 U209-4	.%U209-4
223: U21-5 U22-6 U21-10	.%U21-10
224: U108-12 U210-2	.%U210-2
225: U132-8 U212-10	.%U212-10
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227: U228-10 U214-13	.%U214-13
228: U219-16 U214-15	.%U214-15

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239: U145-32 U22-14	.%U22-14
240: U145-31 U22-2	.%U22-2
241: U21-7 U22-4	.%U22-4
242: U21-12 U21-15 U22-5	.%U22-5
243: U16-17 U22-7	.%U22-7
244: U235-15 U221-2	.%U221-2
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246: U222-4 U222-12 U224-9 U223-1	.%U223-1
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247:	.%U223-10
248: U222-9 U244-23 U223-14	.%U223-14
249: U204-1 U201-9 U223-23	.%U223-23
250: U222-13 U224-1	.%U224-1
251: U222-10 U244-15 U224-23	.%U224-23
252: C153-2 U225-10	.%U225-10
253: C135-1 U225-4	.%U225-4



254: R25-2 U206-1 C158-1 U226-1	.%U226-1
255: R26-2 U206-13 U206-8 U226-8 U226-13	
255:	.%U226-13
256: R17-1 R16-2 U229-12	.%U229-12
257: U46-19 U23-3	.%U23-3
258: U221-16 U234-17	.%U234-17
259: U221-17 U234-18	.%U234-18
260: U221-1 U234-19	.%U234-19
261: U162-11 U235-12	.%U235-12
262: U176-6 U235-13	.%U235-13
263: U220-16 U235-16	.%U235-16
264: U220-17 U235-17	.%U235-17
265: U220-1 U235-18	.%U235-18
266: U220-2 U235-19	.%U235-19
267: U147-30 U237-12	.%U237-12
268: U147-29 U237-13	.%U237-13
269: U147-28 U237-14	.%U237-14
270: U147-27 U237-15	.%U237-15
271: U147-26 U237-16	.%U237-16
272: U147-25 U237-17	.%U237-17
273: U147-24 U237-18	.%U237-18
274: U147-23 U237-19	.%U237-19
275: U147-22 U237-20	.%U237-20
276: U147-31 U238-12	.%U238-12
277: U147-32 U238-13	.%U238-13
278: U147-33 U238-14	.%U238-14
279: U147-34 U238-15	.%U238-15

280: U147-35 U238-16	.%U238-16
281: U147-36 U238-17	.%U238-17
282: U147-37 U238-18	.%U238-18
283: U147-38 U238-19	.%U238-19
284: U47-3 U24-12	.%U24-12
285: U47-2 U24-13	.%U24-13
286: U47-1 U24-14	.%U24-14
287: U17-3 U240-19	.%U240-19
288: U222-5 U244-1	.%U244-1
289: U222-11 U244-9	.%U244-9
290: U93-8 U223-16 U224-16 U244-16 U245-16	
290:	.%U245-16
291: U201-11 U223-8 U224-8 U244-8 U245-8	
291:	.%U245-8
292: U222-6 U245-9	.%U245-9
293: U30-17 U115-5 U25-12	.%U25-12
294: JB20-1 U25-8	.%U25-8
295: U28-8 U27-11	.%U27-11
296: U49-2 U27-5	.%U27-5
297: U49-5 U28-5	.%U28-5
298: U27-1 U28-6	.%U28-6
299: U1-1 U3-13	.%U3-13
300: U1-3 U3-14	.%U3-14
301: U1-18 U3-17	.%U3-17
302: U1-20 U3-18	.%U3-18
303: U4-12 U3-7	.%U3-7
304: U1-39 U3-8	.%U3-8

305: U115-4 U30-11	.%U30-11
306: U29-12 U30-13	.%U30-13
307: U29-15 U30-14	.%U30-14
308: U29-19 U30-18	.%U30-18
309: U115-6 U30-19	.%U30-19
310: U29-2 U30-7	.%U30-7
311: U29-6 U30-8	.%U30-8
312: U28-11 U31-1	.%U31-1
313: U33-1 U31-19	.%U31-19
314: U85-8 U31-2	.%U31-2
315: U11-15 U31-6	.%U31-6
316: U33-2 U32-2	.%U32-2
317: U33-4 U32-4	.%U32-4
318: U66-10 U33-12	.%U33-12
319: U31-16 U33-3	.%U33-3
320: U127-9 U33-5	.%U33-5
321: U107-1 U33-6	.%U33-6
322: U74-2 U35-22	.%U35-22
323: U35-1 U37-13	.%U37-13
324: U35-3 U37-14	.%U37-14
325: U35-18 U37-17	.%U37-17
326: U35-20 U37-18	.%U37-18
327: U35-33 U37-3	.%U37-3
328: U35-35 U37-4	.%U37-4
329: U35-37 U37-7	.%U37-7
330: U35-39 U37-8	.%U37-8

331: U39-8 U38-10	.%U38-10
332: U39-6 U38-11	.%U38-11
333: U39-4 U38-12	.%U38-12
334: U39-2 U38-13	.%U38-13
335: U39-17 U38-3	.%U38-3
336: U39-15 U38-4	.%U38-4
337: U39-11 U38-6	.%U38-6
338: U59-5 U40-5 U39-12	.%U39-12
339: U59-9 U40-3 U39-16	.%U39-16
340: U59-11 U40-2 U39-18	.%U39-18
341: U90-1 U39-19	.%U39-19
342: U60-5 U40-14 U39-3	.%U39-3
343: U60-7 U40-12 U39-5	.%U39-5
344: U60-9 U40-11 U39-7	.%U39-7
345: U60-11 U40-10 U39-9	.%U39-9
346: U1-7 U4-1	.%U4-1
347: U1-33 U4-6	.%U4-6
348: U66-11 U40-15	.%U40-15
349: U42-3 U42-2	.%U42-2
350: U80-9 U45-10	.%U45-10
351: U62-18 U80-12 U45-11	.%U45-11
352: U80-2 U62-4 U45-5	.%U45-5
353: U80-5 U62-5 U45-6	.%U45-6
354: U80-6 U62-6 U45-7	.%U45-7
355: U80-15 U62-7 U45-8	.%U45-8
356: U62-3 U80-16 U45-9	.%U45-9

357: U45-4 U62-12 U46-11	.%U46-11
358: U86-1 U46-14	.%U46-14
359: U45-1 U62-10 U46-15	.%U46-15
360: U45-2 U62-9 U46-17	.%U46-17
361: U50-9 U50-1 U49-4	.%U49-4
362: U7-9 U5-12	.%U5-12
363: U134-9 U50-11	.%U50-11
364: U50-6 U50-13	.%U50-13
365: U30-12 U51-12	.%U51-12
366: U84-10 U51-5	.%U51-5
367: U87-4 U53-1 U52-1	.%U52-1
368: U87-9 U53-14 U52-14	.%U52-14
369: U87-7 U53-15 U52-15	.%U52-15
370: U87-12 U53-2 U52-2	.%U52-2
371: U77-6 U58-11	.%U58-11
372: U77-7 U58-14	.%U58-14
373: U77-3 U58-2	.%U58-2
374: U77-2 U58-5	.%U58-5
375: U39-14 U40-4 U59-7	.%U59-7
376: U11-4 U6-8 U6-12	.%U6-12
377: U1-22 U6-2	.%U6-2
378: U58-4 U59-1 U60-1	.%U60-1
379: U58-12 U59-13 U60-13	.%U60-13
380: U58-9 U59-14 U60-14	.%U60-14
381: U58-7 U59-15 U60-15	.%U60-15
382: U23-11 U59-3 U60-3	.%U60-3

383: U45-3 U46-13 U62-11	.%U62-11
384: X2-1 C36-2 U62-16	.%U62-16
385: C37-1 U63-1	.%U63-1
386: U64-5 U65-12	.%U65-12
387: U64-6 U65-15	.%U65-15
388: U64-7 U65-16	.%U65-16
389: U64-8 U65-19	.%U65-19
390: U48-5 U65-2	.%U65-2
391: U48-6 U65-5	.%U65-5
392: U48-7 U65-6	.%U65-6
393: U48-8 U65-9	.%U65-9
394: U47-4 U66-6	.%U66-6
395: U66-1 U66-8	.%U66-8
396: U66-3 U67-3	.%U67-3
397: U84-9 U67-5	.%U67-5
398: U84-13 U67-9	.%U67-9
399: U70-15 U69-12	.%U69-12
400: U70-14 U69-15	.%U69-15
401: U70-13 U69-16	.%U69-16
402: U70-4 U69-2	.%U69-2
403: U70-3 U69-5	.%U69-5
404: U70-2 U69-6	.%U69-6
405: U70-1 U69-9	.%U69-9
406: U5-13 U7-10	.%U7-10
407: U5-14 U7-11	.%U7-11
408: U94-3 U70-7	.%U70-7

409: U71-8 U72-10	.%U72-10
410: U71-13 U72-12	.%U72-12
411: U71-3 U72-2	.%U72-2
412: U71-4 U72-5	.%U72-5
413: U71-7 U72-7	.%U72-7
414: U54-19 U76-1	.%U76-1
415: U79-9 U78-8	.%U78-8
416: U79-1 U79-5	.%U79-5
417: U82-1 U44-7 U81-4	.%U81-4
418: U83-2 U82-2	.%U82-2
419: U123-11 U82-3	.%U82-3
420: U83-4 U123-9 U82-4	.%U82-4
421: U127-10 U82-5	.%U82-5
422: U174-14 U83-3	.%U83-3
423: U90-4 U88-3	.%U88-3
424: U84-12 U88-5	.%U88-5
425: U12-6 U9-16	.%U9-16
426: U89-8 U90-5	.%U90-5
427: U134-1 U91-6	.%U91-6
428: U94-13 U92-9	.%U92-9
429: U92-7 U94-11	.%U94-11
430: U92-10 U94-15	.%U94-15
431: U91-13 U91-3 U94-16	.%U94-16
432: U94-14 U94-8	.%U94-8
433: U91-1 U91-2 U96-6	.%U96-6
434: U94-4 U96-8	.%U96-8

435: U62-17 C35-2 X2-2 .%X2-2

436: U207-14 U189-14 C159-1 U227-14 J2-1  
436: R25-1 .+12V

437: J94-1 C125-1 R10-1 U225-14 R11-1  
437: D1-1 U122-27 U122-26 U122-1 R33-2  
437: .+5V

438: U207-1 U189-1 R29-2 J99-1 Q1-2 C137-1  
438: .-12V

439: U225-8 C136-1 Q1-3 U8-12 .-5V

440: U210-12 U211-11 .1 MHZ

441: U151-9 U121-16 U120-16 U136-10 U95-10  
441: .10 MHZ H

442: U151-7 U136-13 U135-11 U95-13 .10 MHZ L

443: U225-12 U210-13 .2 MHZ

444: U151-13 U151-5 U198-1 .20 MHZ

445: U46-2 U46-4 U21-9 U175-6 U210-14  
445: .4 MHZ

446: U90-6 U108-2 U151-1 .40 MHZ

447: U145-19 U86-3 U108-13 .8 MHZ

448: U161-14 U126-27 U143-3 U143-5 U159-19  
448: U157-34 U160-19 U147-6 U145-5 U106-1  
448: U105-1 U104-1 U103-1 U102-1 U101-1  
448: U99-1 U100-1 U122-10 U174-1 U81-1  
448: .A<0>

449: U144-40 U107-6 U106-16 U105-16 U104-16  
449: U103-16 U102-16 U101-16 U99-16 U100-16  
449: U122-21 .A<10>

450: U144-1 U107-9 U106-17 U105-17 U104-17  
450: U103-17 U102-17 U101-17 U99-17 U100-17  
450: U122-23 .A<11>

451: U144-2 U107-12 U106-18 U105-18 U104-18  
451: U103-18 U102-18 U101-18 U99-18 U100-18  
451: U122-2 .A<12>

452: U144-3 U107-15 U106-19 U105-19 U104-19



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452: U103-19 U102-19 U101-19 U99-19 U100-19
452: U125-7 .A<13>

453: U144-4 U107-16 U125-8 .A<14>

454: U144-5 U107-19 U125-9 .A<15>

455: U161-12 U172-10 U159-20 U157-33 U160-20
455: U147-7 U106-2 U105-2 U104-2 U103-2
455: U102-2 U101-2 U99-2 U100-2 U122-9
455: U174-2 U81-2 .A<1>

456: U32-12 U147-8 U106-3 U105-3 U104-3
456: U103-3 U102-3 U101-3 U99-3 U100-3
456: U122-8 U174-3 U81-3 U133-2 .A<2>

457: U32-14 U106-4 U105-4 U104-4 U103-4
457: U102-4 U101-4 U99-4 U100-4 U122-7
457: U81-5 U83-1 U133-3 .A<3>

458: U144-34 U127-37 U106-5 U105-5 U104-5
458: U103-5 U102-5 U101-5 U99-5 U100-5
458: U122-6 U44-1 .A<4>

459: U144-35 U127-38 U106-6 U105-6 U104-6
459: U103-6 U102-6 U101-6 U99-6 U100-6
459: U122-5 U44-2 .A<5>

460: U144-36 U127-39 U106-7 U105-7 U104-7
460: U103-7 U102-7 U101-7 U99-7 U100-7
460: U122-4 U44-3 .A<6>

461: U144-37 U127-40 U106-13 U105-13 U104-13
461: U103-13 U102-13 U101-13 U99-13 U100-13
461: U122-3 U44-5 .A<7>

462: U144-38 U107-2 U106-14 U105-14 U104-14
462: U103-14 U102-14 U101-14 U99-14 U100-14
462: U122-25 .A<8>

463: U144-39 U107-5 U106-15 U105-15 U104-15
463: U103-15 U102-15 U101-15 U99-15 U100-15
463: U122-24 .A<9>

464: U173-12 .AD15
*** Only one pin in net
*** Run Has no outputs

465: U1-34 U2-6 .ADDR DATA<0>

466: U1-36 U2-7 .ADDR DATA<1>

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467: U1-38 U2-8	.ADDR DATA<2>
468: U1-40 U2-9	.ADDR DATA<3>
469: U1-2 U2-11	.ADDR DATA<4>
470: U1-4 U2-12	.ADDR DATA<5>
471: U1-17 U2-13	.ADDR DATA<6>
472: U1-19 U2-14	.ADDR DATA<7>
473: U1-21 U24-6	.ADDR DATA<8>
474: U163-6 U218-3 U217-3 U220-3 U221-3	
474: U240-17 U219-3	.ADDR<0>
475: U149-6 U164-4 U148-2 U218-6 U217-6	
475: U220-6 U221-6 U219-6 U240-11	.ADDR<1>
476: U149-4 U164-7 U148-3 U218-4 U217-4	
476: U220-4 U221-4 U219-4 U240-13	.ADDR<2>
477: U149-5 U164-9 U148-4 U218-5 U217-5	
477: U220-5 U221-5 U219-5 U240-15	.ADDR<3>
478: RN3-3 U12-16 JB2-1	.B<0>
479: RN3-4 U12-18 JB4-1	.B<1>
480: RN3-5 U12-3 JB6-1	.B<2>
481: RN3-6 U12-5 JB8-1	.B<3>
482: U12-9 JB24-1 RN3-8	.BA<0>
483: RN3-7 U12-7 JB28-1	.BA<1>
484: U212-8 U211-17	.BC INSTR ENB
485: U212-12 U211-16	.BC INSTR<0>
486: U212-13 U211-15	.BC INSTR<1>
487: U212-14 U211-14	.BC INSTR<2>
488: U135-2 U212-20	.BIT CNT OVFL L
489: U26-6 U34-3 U29-3 U31-3	.BR<0>
490: U26-7 U34-4 U29-4 U31-4	.BR<1>

491: U26-8 U34-7 U29-7 U31-7	.BR<2>
492: U26-9 U34-8 U29-8 U50-2 U31-8	.BR<3>
493: U26-11 U34-13 U29-13 U31-13	.BR<4>
494: U26-12 U34-14 U29-14 U31-14	.BR<5>
495: U26-13 U34-17 U29-17 U31-17	.BR<6>
496: U26-14 U34-18 U29-18 U31-18	.BR<7>
497: U167-5 U185-5 U170-5 U168-2	.BUF D<0>
498: U167-6 U185-6 U170-6 U168-5	.BUF D<1>
499: U167-7 U185-7 U170-7 U168-6	.BUF D<2>
500: U167-8 U185-8 U170-8 U168-9	.BUF D<3>
501: U152-5 U186-5 U171-5 U168-12	.BUF D<4>
502: U152-6 U186-6 U171-6 U168-15	.BUF D<5>
503: U152-7 U186-7 U171-7 U168-16	.BUF D<6>
504: U152-8 U186-8 U171-8 U168-19	.BUF D<7>
505: U144-23 U82-9 U172-9 U125-11	.BUS ACK L
506: U146-9 U162-13	.BUS CTRL
507: RN3-2 U12-14 JB26-1	.BUS ENB
508: RN8-5 U144-25 U82-6	.BUS RQST L
509: U76-12 U57-17	.BUSY
*** Run Has no outputs	
510: U191-6 U176-10 U17-1	.C/P ENB H
511: U69-3 U71-18 U63-10	.CAR SENSE H
512: U91-5 U91-4 U63-9	.CAR SENSE L
513: U35-14 U73-6	.CC L
514: U75-11 U70-11 U73-11	.CC SEL<0>
515: U75-12 U70-10 U73-10	.CC SEL<1>
516: U75-13 U70-9 U73-9	.CC SEL<2>

517: U75-14 U94-17 U73-7 .CC SEL<3>  
518: U133-11 U142-9 U139-9 U142-16 U139-16  
518: .CLK IN H  
519: U133-12 U140-16 U140-9 U141-9 U141-16  
519: .CLK IN L  
520: U133-9 U186-19 U185-1 .CLK OUT H  
521: U133-10 U171-19 U170-1 .CLK OUT L  
522: U176-9 U65-11 U140-1 U141-19 U139-1  
522: U142-19 U228-4 U204-11 U204-13 U92-6  
522: U155-1 U154-19 U156-1 U153-19 U183-19  
522: U182-19 U184-1 U169-19 U132-9 .CLK-4F  
523: J176-1 U228-3 U161-2 .CLK-7R  
524: U243-11 U242-11 U204-10 U209-5 U37-11  
524: U35-31 U74-3 U69-11 U130-1 U71-11  
524: U193-10 U23-13 .CLKOR  
525: U199-9 U195-9 U200-5 U110-11 U149-14  
525: U149-13 U148-1 U218-13 U217-13 U218-14  
525: U217-14 U220-14 U221-14 U219-14 U219-13  
525: U220-13 U221-13 U204-12 .CLKORB  
526: U34-6 U18-4 .CLR CRC H  
527: U236-12 U228-11 U162-9 U176-4 .CO<1>  
528: U162-10 U176-5 U214-12 .CO<2>  
529: U69-17 U63-6 .COLLISION  
530: C156-1 J96-1 .COLLISION+  
531: C157-1 J194-1 .COLLISION-  
532: J39-1 U132-6 .COM NET INT L  
533: U112-2 U117-12 U76-10 .CRC BIT H  
534: U112-18 U136-2 .CRC BIT L  
535: U14-9 U19-6 .CRC BITS  
536: U51-9 U17-9 .CRC CLK ENB H  
537: U7-1 U18-13 .CRC ERR H

538: U137-18 U116-6 .CRC ERR<2>  
 539: U138-18 U116-7 .CRC ERR<3>  
 540: U117-16 U116-8 .CRC ERR<4>  
 541: U73-13 U116-17 .CRC ERROR  
 542: U197-4 U199-10 U200-6 .D GRANT H  
 543: U127-3 RN1-9 U125-6 .D MEM RD L  
 544: RN1-10 U127-4 U125-5 .D MEM WR L  
 545: U7-15 RN6-8 JP2-2 U66-9 U11-2 .D SEL<0>  
 546: U7-14 RN6-7 JP3-2 U85-4 .D SEL<1>  
 547: U48-14 U139-14 U140-14 RN10-2 U144-14  
 547: U126-11 U127-30 U107-3 U159-8 U158-40  
 547: U160-8 U157-40 U147-10 U145-6 U46-3  
 547: U80-3 U168-3 U106-12 U106-8 U122-11  
 547: U174-13 .D<0>  
 548: U48-13 U139-13 U140-13 RN10-3 U144-15  
 548: U126-10 U127-29 U107-4 U159-7 U158-1  
 548: U160-7 U157-1 U147-11 U145-7 U46-5  
 548: U80-4 U168-4 U105-12 U105-8 U122-12  
 548: .D<1>  
 549: U48-12 U139-12 U140-12 RN10-4 U144-12  
 549: U126-9 U127-28 U107-7 U159-6 U158-39  
 549: U160-6 U157-39 U147-12 U145-8 U46-7  
 549: U80-7 U168-7 U104-12 U104-8 U122-13  
 549: .D<2>  
 550: U48-11 U139-11 U140-11 RN10-5 U144-8  
 550: U126-8 U127-27 U107-8 U159-5 U158-2  
 550: U160-5 U157-2 U147-13 U145-9 U46-9  
 550: U80-14 U168-8 U103-12 U103-8 U122-15  
 550: .D<3>  
 551: U64-14 U142-14 U141-14 RN10-6 U144-7  
 551: U126-7 U127-26 U107-13 U159-4 U158-38  
 551: U160-4 U157-38 U147-14 U145-10 U80-17  
 551: U168-13 U102-12 U102-8 U122-16 .D<4>  
 552: U64-13 U142-13 U141-13 RN10-7 U144-9  
 552: U126-6 U127-23 U107-14 U159-3 U158-3  
 552: U160-3 U157-3 U147-15 U145-11 U80-8  
 552: U168-14 U101-12 U101-8 U122-17 .D<5>

553: U64-12 U85-7 U142-12 U141-12 RN10-8  
 553: U144-10 U126-5 U127-22 U107-17 U159-2  
 553: U158-37 U160-2 U157-37 U147-16 U145-12  
 553: U80-13 U168-17 U100-12 U100-8 U122-18  
 553: .D<6>  
  
 554: U64-11 U85-9 U142-11 U141-11 RN10-9  
 554: U144-13 U126-4 U127-21 U107-18 U159-1  
 554: U158-4 U160-1 U157-4 U147-17 U145-13  
 554: U168-18 U99-12 U99-8 U122-19 .D<7>  
  
 555: U161-6 U144-30 U127-32 .DA<0>  
 556: U161-8 U144-31 U127-33 .DA<1>  
 557: U32-8 U144-32 U127-34 .DA<2>  
 558: U32-6 U144-33 U127-35 .DA<3>  
  
 559: U14-12 U38-5 U39-13 U223-7 U245-7  
 559: U244-7 U224-7 .DATA INTO FIFO  
  
 560: U121-8 U120-8 U94-12 U115-11 .DELAYED GATED PACKE  
 561: RN6-2 U15-14 JA34-1 .DIR L  
 562: U1-14 U7-6 .DISK CC L  
 563: U9-12 U84-11 .DISK INT ENB  
 564: U84-8 J179-1 .DISK INT L  
 565: U195-6 U68-17 .DISK RQST H  
 566: U213-14 U68-15 .DISK WR H  
 567: U68-4 U31-15 .DISK WR OP H  
 568: U131-3 U128-12 U127-15 .DMA ACK L  
 569: U83-13 U133-15 U123-2 U162-12 .DMA FIFO L  
 570: U146-6 U186-2 .DMA IR  
 571: U146-5 U142-17 .DMA OR  
 572: U146-7 U127-16 .DMA RQST L  
 573: U158-36 U125-16 .DP IO RQST L  
 574: JB18-1 U12-12 RN6-9 .DRIVE SEL<0>

575: U112-14 JB16-1 RN6-10 .DRIVE SEL<1>  
576: U30-2 U17-4 U19-14 .DS<0>  
577: U30-5 U17-5 U19-2 .DS<1>  
578: U47-14 U34-11 .EMIT<1>  
579: U47-13 U29-11 U50-3 U27-3 .EMIT<2>  
580: U47-12 U31-11 U51-3 .EMIT<3>  
581: U47-9 U68-1 U68-19 .EMIT<6>  
582: U132-1 U111-9 .ENB BIT CNT H  
583: U138-3 U117-3 U116-3 U137-3 U136-3  
583: U78-2 U135-6 .ENB CRC BITS H  
584: U136-5 U135-1 U135-5 U63-13 .ENB FIFO BITS H  
585: U114-9 U155-9 U153-9 .ENB IN FIFO<0> L  
586: U114-10 U154-9 U156-9 .ENB IN FIFO<1> L  
587: U110-19 U216-14 U115-8 U166-1 U191-4  
587: U191-2 .ENB MA H  
588: U114-11 U121-17 U120-17 .ENB NET FIFO L  
589: U194-5 U132-3 .ENB NET INT H  
590: U110-15 U203-6 .ENB PL  
591: U181-6 U110-16 .ENB TOP  
592: U111-6 U211-1 .ENB USEC CLK H  
593: U111-5 U132-4 .ENB USEC INT H  
594: U146-14 U128-13 U126-18 U125-13 .END DMA INT  
595: U162-2 U128-11 U126-23 U127-36 RN1-2  
595: U128-5 .EOP L  
596: U138-4 U117-4 U116-4 U137-4 U119-15  
596: .ERR CHECK  
597: U195-13 J103-1 .EXT A RQST H  
598: U213-1 J154-1 .EXT A WR H

599: U193-13 U129-14	.EXT ADDR L
600: J173-1 U195-4 R1-2	.EXT B RQST H
601: U213-2 J174-1	.EXT B WR H
602: U4-5 U9-2	.F<0>
603: U4-11 U9-5	.F<1>
604: U4-14 U9-6	.F<2>
605: U34-9 U58-3	.FA<0>
606: U34-12 U58-6	.FA<1>
607: U34-15 U58-10	.FA<2>
608: U34-16 U58-13	.FA<3>
609: U11-6 JB34-1 RN4-4	.FAULT
610: U29-5 U223-11 U224-11 U244-11 U245-11	
610:	.FIFO CLR L
611: U30-9 U201-13	.FIFO IN CLK ENB H
612: U30-6 U93-10	.FIFO OUT CLK ENB H
613: U127-25 U145-15 U128-6	.FLOP ACK L
614: RN5-6 U15-11 JA20-1	.FLOP INDEX L
615: U126-21 U145-18	.FLOP INT
616: U46-6 JA46-1 RN5-8	.FLOP RD DATA L
617: RN5-7 U15-13 JA22-1	.FLOP RDY L
618: U127-19 U33-10	.FLOP RQST L
619: U15-1 U131-12 U16-13	.FLOP RW
620: U145-23 U131-6	.FLOP SEP DATA
621: U16-7 U16-1	.FLOP SK
622: U15-4 RN5-4 JA42-1	.FLOP TK<0> L
623: U15-2 RN5-3 JA10-1	.FLOP TWO SIDED L



624: U145-22 U86-2	.FLOP WINDOW
625: U16-3 JA38-1	.FLOP WR DATA L
626: U16-5 JA40-1	.FLOP WR ENB L
627: U16-2 RN5-2 JA44-1	.FLOP WR PRO L
628: U172-3 U172-4 U170-18 U171-18 U186-18	
628: U185-18 U140-18 U141-18 U142-18 U139-18	
628:	.FLUSH L
629: U173-11	.FP CLK L
*** Only one pin in net	
*** Run Has no outputs	
630: U76-13 U57-15	.FP INT
*** Run Has no outputs	
631: U57-11 U33-9	.FR
*** Run Has no outputs	
632: U33-8	.FR L
*** Only one pin in net	
633: U57-13	.FS
*** Only one pin in net	
*** Run Has no outputs	
634: U201-5 U211-19	.GATED 1MHZ
635: U94-6 U93-3	.GATED PACKET CLK H
636: U93-11 U132-13	.GATED PACKET CLK L
637: U66-5 U93-6 U49-13	.GATED PLO CLK H
638: U73-2 U88-9	.GO H
639: U127-24 U147-2	.GPB ACK L
640: J42-1 U237-9	.GPB ATN
641: J144-1 U237-7	.GPB DAV
642: J48-1 U238-2	.GPB DI<1>
643: J147-1 U238-3	.GPB DI<2>
644: J47-1 U238-4	.GPB DI<3>
645: J146-1 U238-5	.GPB DI<4>

646: J38-1 U238-6	.GPB DI<5>
647: J138-1 U238-7	.GPB DI<6>
648: J139-1 U238-8	.GPB DI<7>
649: J41-1 U238-9	.GPB DI<8>
650: J46-1 U237-8	.GPB EOI
651: J43-1 U237-4	.GPB IFC
652: RN1-4 U147-9	.GPB INT L
653: J143-1 U237-5	.GPB NDAC
654: J44-1 U237-6	.GPB NRFD
655: U238-11 U174-9	.GPB PE
656: U147-5 U125-15	.GPB RD
657: J141-1 U237-3	.GPB REN
658: U127-18 U147-1	.GPB RQST L
659: U237-1 U174-7	.GPB SC
660: J142-1 U237-10	.GPB SRQ
661: U199-11 J171-1 U109-18	.GRANT DMA
662: U150-12 U216-13	.HDCAR
663: U15-5 JA18-1	.HEAD LD L
664: J148-1 U216-1	.HOLD OFF L
665: U166-12 U166-5 U128-9 U23-5 U166-10	
665: U114-1 U17-2 U161-18	.ICLK-4R
666: U34-2 U30-3	.IDS<0>
667: U34-5 U30-4	.IDS<1>
668: JB10-1 RN4-3 U6-11	.INDEX
669: U129-1 J72-1 U111-1 U194-1 U28-2	
669: U13-1 U9-1	.INIT L
670: U126-13 U157-7	.INT ENB

671: U140-5 U242-2 U153-4 U223-3	.IO MDO BUF<0>
672: U139-7 U243-6 U154-6 U244-5	.IO MDO BUF<10>
673: U139-8 U243-9 U154-7 U244-6	.IO MDO BUF<11>
674: U142-5 U243-12 U154-8 U245-3	.IO MDO BUF<12>
675: U142-6 U243-15 U156-4 U245-4	.IO MDO BUF<13>
676: U142-7 U243-16 U156-5 U245-5	.IO MDO BUF<14>
677: U142-8 U243-19 U156-6 U245-6	.IO MDO BUF<15>
678: U140-6 U242-5 U153-5 U223-4	.IO MDO BUF<1>
679: U140-7 U242-6 U153-6 U223-5	.IO MDO BUF<2>
680: U140-8 U242-9 U153-7 U223-6	.IO MDO BUF<3>
681: U141-5 U242-12 U153-8 U224-3	.IO MDO BUF<4>
682: U141-6 U242-15 U155-4 U224-4	.IO MDO BUF<5>
683: U141-7 U242-16 U155-5 U224-5	.IO MDO BUF<6>
684: U141-8 U242-19 U155-6 U224-6	.IO MDO BUF<7>
685: U139-5 U243-2 U154-4 U244-3	.IO MDO BUF<8>
686: U139-6 U243-5 U154-5 U244-4	.IO MDO BUF<9>
687: U197-11 J178-1 U195-1 U109-17	.IO MEM RQST
688: U213-5 J153-1 U109-16	.IO MEM WR
689: U179-15 U115-10	.IO SEL H
690: U150-14 U164-1 U148-8 U236-14 U166-3	
690: U234-14 U235-14 U214-14	.IO SEL L
691: U216-10 J69-1 U233-1 U209-1 U230-2	
691: U87-2 U196-12 U211-7	.IOA<0>
692: U163-12 U216-11 J169-1 U233-2 U209-2	
692: U230-3 U87-5 U196-13 U211-8	.IOA<1>
693: J68-1 U233-3 U209-3 U230-4 U87-11	
693:	.IOA<2>
694: J168-1 U208-1 U230-5	.IOA<3>

695: J67-1 U208-2 U230-6 .IOA<4>  
696: J167-1 U208-4 U230-7 .IOA<5>  
697: J66-1 U208-6 U230-8 .IOA<6>  
698: U232-1 U231-1 J166-1 U208-3 U230-9  
698: U211-9 .IOA<7>  
699: U232-19 U231-19 U230-19 .IOB BUF ENB L  
700: U230-1 J71-1 U208-5 .IOB ENB L  
701: U57-9 U165-4 U235-9 U167-14 U65-3  
701: U231-2 U129-4 U52-4 U71-2 U212-4  
701: U111-3 U196-4 U60-4 U77-15 U13-3  
701: U9-3 U11-3 .IOB<0>  
702: U214-8 U232-4 U85-16 .IOB<10>  
703: U214-9 U232-5 .IOB<11>  
704: U235-5 U232-6 .IOB<12>  
705: U235-6 U232-7 .IOB<13>  
706: U235-7 U232-8 .IOB<14>  
707: U57-3 U235-8 U161-3 U232-9 .IOB<15>  
708: U57-5 U165-5 U234-5 U167-13 U65-4  
708: U231-3 U129-5 U52-6 U71-5 U212-5  
708: U111-4 U196-5 U60-6 U77-1 U13-4 U9-4  
708: U11-5 .IOB<1>  
709: U165-12 U236-5 U234-6 U167-12 U65-7  
709: U231-4 U129-12 U52-10 U71-6 U212-6  
709: U111-7 U196-6 U60-10 U77-10 U13-7  
709: U9-7 U11-7 .IOB<2>  
710: U165-13 U236-6 U234-7 U167-11 U65-8  
710: U231-5 U129-13 U52-12 U71-9 U212-7  
710: U111-8 U196-7 U60-12 U77-9 U13-8  
710: U9-8 U85-12 .IOB<3>  
711: U150-5 U148-6 U236-7 U152-14 U65-13  
711: U231-6 U53-4 U71-12 U212-16 U111-13  
711: U196-16 U59-4 U13-13 U9-13 U11-12  
711: .IOB<4>  
712: U150-6 U25-3 U236-8 U152-13 U65-14

712: U231-7 U53-6 U71-15 U212-17 U111-14  
712: U196-17 U59-6 U13-14 U9-14 U11-14  
712: .IOB<5>

713: U150-7 U25-5 U236-9 U152-12 U65-17  
713: U231-8 U53-10 U71-16 U212-18 U111-17  
713: U196-18 U59-10 U13-17 U9-17 U11-9  
713: .IOB<6>

714: U57-7 U150-8 U25-4 U214-5 U152-11  
714: U161-5 U65-18 U231-9 U53-12 U71-19  
714: U212-19 U111-18 U196-19 U59-12 U13-18  
714: U9-18 U85-14 .IOB<7>

715: U214-6 U232-2 U88-12 U11-16 .IOB<8>

716: U214-7 U232-3 U11-18 .IOB<9>

717: U152-2 U85-11 .IOD OUT FIFO

718: U162-5 U161-17 U174-4 .IOD OUT RDY

719: U231-18 J64-1 .IOD<0>

720: U232-16 J58-1 .IOD<10>

721: U232-15 J158-1 .IOD<11>

722: U232-14 J57-1 .IOD<12>

723: U232-13 J157-1 .IOD<13>

724: U232-12 J56-1 .IOD<14>

725: U232-11 J156-1 .IOD<15>

726: U231-17 J164-1 .IOD<1>

727: U231-16 J63-1 .IOD<2>

728: U231-15 J163-1 .IOD<3>

729: U231-14 J62-1 .IOD<4>

730: U231-13 J162-1 .IOD<5>

731: U231-12 J61-1 .IOD<6>

732: U231-11 J161-1 .IOD<7>

733: U232-18 J59-1 .IOD<8>

734: U232-17 J159-1	.IOD<9>
735: U35-34 U36-9 U32-11	.J ADDR<0>
736: U35-36 U36-11 U32-13	.J ADDR<1>
737: U35-38 U36-12 U32-15	.J ADDR<2>
738: U35-40 U36-13 U32-17 U57-2	.J ADDR<3>
739: U35-2 U36-14 U55-17 U55-2	.J ADDR<4>
740: U35-4 U75-6 U55-15 U55-4	.J ADDR<5>
741: U35-17 U75-7 U55-13 U55-6	.J ADDR<6>
742: U35-19 U75-8 U55-11 U55-8	.J ADDR<7>
743: U35-21 U75-9	.J ADDR<8>
744: U35-12 U36-6	.J CMD<0>
745: U35-11 U36-7	.J CMD<1>
746: U35-9 U36-8	.J CMD<2>
747: U35-8 U56-14	.J CMD<3>
748: U1-12 U24-11	.JMP<0>
749: U1-11 U24-9	.JMP<1>
750: U1-9 U24-8	.JMP<2>
751: U1-8 U24-7	.JMP<3>
752: RN1-6 J197-1 U157-29	.KBD DATA H
753: U73-12 U69-19	.L MATCH H
754: U118-8 U168-11	.LATCH BUF D
755: U230-17 U176-13 U135-4 U211-4	.LD BIT CNT L
756: U230-22 U9-11 U28-12	.LD D CTRL 1
757: U230-23 U13-11 U25-11 U25-10 U25-9	.LD D CTRL 2
757:	
758: U230-20 U77-11	.LD DF CNTR L
759: U230-21 U23-12 U58-1 U77-14	.LD DF DATA L

760: U216-12 U115-9 U166-2 U230-16	.LD DMA ADDR L
761: U165-9 U209-15	.LD DMA CHAN L
762: U209-14	.LD FP INST L
*** Only one pin in net	
763: U129-9 U209-10	.LD INT ENB L
764: U209-13 U111-11 U88-11	.LD NET CTRL L
765: U92-12 U72-9 U74-11	.LD NET CTRL REG<0>
766: U92-14 U119-9	.LD NET CTRL REG<1>
767: U209-12 U194-3	.LD NET ENB L
768: U94-5 U121-2 U120-2	.LD NET FIFO L
769: U208-14 U87-1 U130-2	.LD NET FILE L
770: U94-9 U183-1 U169-1	.LD OUT FIFO<0> H
771: U94-7 U182-1 U184-19	.LD OUT FIFO<1> H
772: U64-19 U48-1 U209-11	.LD UPROC DATA L
773: U230-18 U193-9 U211-6	.LD USEC CLK L
774: U5-8 U66-12	.LDSR
775: RN6-4 U16-12 JA2-1	.LOW CUR L
776: U130-8 U124-2 U158-8 U157-8 U44-6	
776:	.M1 L
777: J54-1 U191-3	.MA EXT A
778: U176-8 U239-19 U239-1 U241-19 U241-1	
778: U240-1	.MA OUT L
779: J31-1 U240-16 U240-5	.MADDR<10>
780: U240-18 J131-1 U240-3	.MADDR<11>
781: J29-1 U241-12	.MADDR<12>
782: U241-14 J129-1	.MADDR<13>
783: U241-16 J28-1	.MADDR<14>

784: U241-18 J128-1	.MADDR<15>
785: U241-3 J27-1	.MADDR<16>
786: U241-5 J127-1	.MADDR<17>
787: U241-7 J26-1	.MADDR<18>
788: J126-1 U241-9	.MADDR<19>
789: U239-5 J36-1	.MADDR<2>
790: U239-3 J136-1	.MADDR<3>
791: U239-18 J34-1	.MADDR<4>
792: U239-16 J134-1	.MADDR<5>
793: U239-14 J33-1	.MADDR<6>
794: U239-12 J133-1	.MADDR<7>
795: J32-1 U240-12 U240-9	.MADDR<8>
796: J132-1 U240-14 U240-7	.MADDR<9>
797: U7-3 U90-2 U27-12	.MATCH H
798: U170-14 U169-15 J14-1 U223-21	.MDI<0>
799: U185-12 U184-13 J8-1 U244-19	.MDI<10>
800: U185-11 U184-12 J108-1 U244-18	.MDI<11>
801: U186-14 U184-11 J7-1 U245-21	.MDI<12>
802: U186-13 U182-15 J107-1 U245-20	.MDI<13>
803: U186-12 U182-14 J6-1 U245-19	.MDI<14>
804: U186-11 U182-13 J106-1 U245-18	.MDI<15>
805: U170-13 U169-14 J114-1 U223-20	.MDI<1>
806: U170-12 U169-13 J13-1 U223-19	.MDI<2>
807: U170-11 U169-12 J113-1 U223-18	.MDI<3>
808: U171-14 U169-11 J12-1 U224-21	.MDI<4>
809: U171-13 U183-15 J112-1 U224-20	.MDI<5>



810: U171-12 U183-14 J11-1 U224-19	.MDI<6>
811: U171-11 U183-13 J111-1 U224-18	.MDI<7>
812: U185-14 U184-15 J9-1 U244-21	.MDI<8>
813: U185-13 U184-14 J109-1 U244-20	.MDI<9>
814: U242-3 J24-1	.MDO<0>
815: J18-1 U243-7	.MDO<10>
816: J118-1 U243-8	.MDO<11>
817: J17-1 U243-13	.MDO<12>
818: J117-1 U243-14	.MDO<13>
819: J16-1 U243-17	.MDO<14>
820: J116-1 U243-18	.MDO<15>
821: U242-4 J124-1	.MDO<1>
822: U242-7 J23-1	.MDO<2>
823: U242-8 J123-1	.MDO<3>
824: U242-13 J22-1	.MDO<4>
825: U242-14 J122-1	.MDO<5>
826: U242-17 J21-1	.MDO<6>
827: U242-18 J121-1	.MDO<7>
828: J19-1 U243-3	.MDO<8>
829: J119-1 U243-4	.MDO<9>
830: U145-26 U131-1 U175-10	.MFM
831: U92-15 U112-11	.NET DMA RQST L
832: U69-8 U120-10 U120-1 U121-10	.NET FIFO IR
833: U69-7 U121-23 U191-9 U113-1 U121-14	
833:	.NET FIFO OR
834: U72-15 U112-17 U132-2	.NET INT H
835: U112-3 U88-13	.NET INT L

836: U73-14 U69-18 U76-3	.NET MATCH H
837: R2-2 U191-12 U199-14 U177-17	.NET RQST H
838: U199-13 U177-15	.NET WR H
839: R19-1 J78-1 U229-5 U229-9 U229-6	..
839: U229-11	.NET XMIT+
*** Run has multiple outputs	
840: R20-1 J79-1 U229-2 U229-15 U229-14	
840: U229-3	.NET XMIT-
*** Run has multiple outputs	
841: U56-6 U92-4	.O SEL ENB
842: U133-14 U123-14	.ODD
843: U66-2 U11-11 JB22-1 RN4-6	.ON CYLINDER
844: RN8-6 U144-20 U157-36 U125-4 U44-4	
844:	.P IO RQST L
845: RN8-7 U144-19 U124-4 U125-3	.P MEM RQST L
846: U28-1 U9-9	.P RESET L
847: U144-22 RN8-9 U130-5 U130-4 U127-2	
847:	.P WR L
848: U95-9 U93-1 U79-3 U135-3	.PACKET CLK H
849: U95-12 U93-12 U79-11 U78-1	.PACKET CLK L
850: U121-7 U120-7 U76-9 U95-7 U79-12	
850: U78-9	.PACKET DATA H
851: U218-16 U214-19	.PALR7
852: U64-17 U128-3 U126-19	.PERQ INT
853: U148-9 U150-15	.PHDCAR
854: U69-13 U79-6 U93-13 U93-2 U71-17	
854:	.PIP H
855: U128-10 U223-2 U224-2 U244-2 U245-2	
855:	.PL DISK
856: J104-1 U204-6	.PL EXT A

857: J74-1 U228-6 .PL EXT B

858: U204-4 U155-19 U154-1 U156-19 U153-1  
858: .PL NET

859: U204-8 U142-1 U139-19 U141-1 U140-19  
859: .PL UPROC

860: U14-11 U51-11 U8-11 U8-3 U14-3 U93-4  
860: U49-1 U90-11 U134-11 U93-9 U201-12  
860: .PLO CLK H

861: U38-8 U28-10 U40-7 U17-10 U90-10  
861: .PLO CLK L

862: U27-9 U49-3 .PREMATCH H

863: U66-4 U66-13 U49-9 .PROC CLK H

864: U6-3 U3-11 U1-31 U30-1 U49-7 .PROC CLK L

865: U122-20 U125-17 .PROM CS L

866: U173-13 U173-10 U152-19 U167-19 U64-1  
866: U48-19 U124-10 U124-12 RN2-2 U124-1  
866: U158-6 U159-14 U159-11 U159-16 U81-6  
866: U209-6 U233-6 U134-13 U134-10 .PU1

867: RN2-4 U123-10 U123-3 U118-10 U118-4  
867: U118-1 U118-13 U194-12 U194-10 U123-7  
867: U170-19 U171-1 U186-1 U185-19 U143-6  
867: U207-12 U207-5 U207-10 .PU3

868: U213-3 U199-1 RN2-5 U180-1 U178-1  
868: U165-1 U150-9 U150-4 U215-1 .PU4

869: U6-4 RN2-6 U1-32 U1-15 U47-6 U7-2  
869: U28-9 U27-10 U40-9 U27-13 U14-13  
869: U14-10 U38-9 U51-10 U51-13 U14-1  
869: U14-4 U18-2 U50-12 U27-4 U50-10 U49-10  
869: U49-12 U49-11 U202-13 U6-10 U6-13  
869: U88-4 U67-4 U67-10 U51-4 U67-2 U88-2  
869: U67-12 .PU5

870: U74-1 U35-15 U35-32 U73-4 U87-14  
870: U177-19 U76-2 U113-15 U113-2 U137-7  
870: U138-7 U215-12 U215-10 RN2-7 U202-4  
870: U202-2 U198-14 U198-12 U113-14 U113-10  
870: U134-2 U134-4 U74-10 U119-1 U79-13  
870: U79-10 U212-15 U196-15 .PU6

871: U76-5 U198-4 U135-10 U88-10 RN2-8

871: U63-5 U63-11 U63-3	.PU7
872: U214-3 U240-4 U219-10	.R<10>
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889: U214-2 U240-6 U219-8	.R<9>
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892:	.RA<3>
893: U106-11 U105-11 U104-11 U103-11 U102-11	
893: U101-11 U99-11 U100-11 U125-18	.RAM CS L
894: U106-9 U105-9 U104-9 U103-9 U102-9	
894: U101-9 U99-9 U100-9 U125-19	.RAM WE L

895: U70-12 U111-16	.RCV ALL
896: U134-6 U95-11	.RCV CLK H
897: U134-5 U113-13 U95-14	.RCV CLK L
898: R21-2 U206-11 U63-4	.RCV COLLISION
899: U113-7 U95-5	.RCV DATA
900: U226-11 R23-2 U94-2 U113-11 U202-3	
900: U198-13 U63-12	.RCV DATA OUT
901: U176-3 U42-1	.RCV EDGE DET
902: U215-9 U96-1	.RCV FLOP
903: J89-1 C140-2	.RCV+
904: J91-1 C154-2	.RCV-
905: U230-14 U212-9 U211-3	.RD BIT CNT L
906: JB48-1 U8-6 R32-2	.RD DATA +
907: U8-7 JB49-1 R32-1	.RD DATA -
908: U38-2 U38-1 U8-5	.RD DATA H
909: U233-12 U11-1 U11-19 U85-1 U67-13	
909: U67-1 U51-1 U88-1	.RD DISK STAT L
910: U233-14	.RD FP RESULT L
*** Only one pin in net	
911: U57-19 U233-15	.RD FP STAT L
912: JB36-1 U32-16 RN6-6	.RD GATE
913: U146-11 RN8-8 U144-21 U126-3 U127-1	
913: U159-22 U158-32 U160-22 U157-32 U145-2	
913: U23-2 U125-2	.RD L
914: U233-13 U72-1 U71-1	.RD NET STAT L
915: U152-16 U167-16 U152-9 U167-9 U126-20	
915: U233-11	.RD UPROC DATA L
916: U161-19 U233-10	.RD UPROC STAT L
917: U230-15 U196-9 U211-5	.RD USEC CLK L

918: U6-1 U3-1 U28-3 U68-18 U29-1 U28-13  
 918: U49-15 U50-4 U28-4 U49-14 .RESET D L  
 919: U138-5 U117-5 U116-5 U137-5 U112-15  
 919: U119-5 .RESET FIFO & CRC H  
 920: U155-18 U154-18 U156-18 U153-18 U177-18  
 920: U169-18 U183-18 U182-18 U184-18 U121-11  
 920: U120-11 U112-5 U176-12 U211-2 .RESET FIFO & CRC L  
 921: U127-13 U145-1 U129-11 .RESET H  
 922: U172-2 U152-18 U167-18 U64-18 U48-18  
 922: U144-26 U158-21 U157-21 U147-19 U80-1  
 922: U129-10 U174-15 .RESET L  
 923: U92-5 U91-9 U91-10 U78-4 U112-16  
 923: .RESET NET H  
 924: U74-4 U37-1 U111-15 U112-4 .RESET NET L  
 925: J87-1 U190-4 .RS232 CD A  
 926: U205-4 J193-1 .RS232 CD B  
 927: J86-1 U190-1 .RS232 CTS A  
 928: U205-1 J192-1 .RS232 CTS B  
 929: U207-8 J82-1 .RS232 DTR A  
 930: J188-1 U189-8 .RS232 DTR B  
 931: J182-1 U190-13 .RS232 RC IN A  
 932: U205-13 J196-1 .RS232 RC IN B  
 933: J84-1 U190-10 .RS232 RD A  
 934: U205-10 J191-1 .RS232 RD B  
 935: U143-13 U143-12 U158-10 .RS232 RQST L  
 936: U207-6 J184-1 .RS232 RTS A  
 937: J189-1 U189-6 .RS232 RTS B  
 938: U188-10 J83-1 .RS232 TC IN A  
 939: U188-13 J186-1 .RS232 TC IN B

940: U207-11 J181-1	.RS232 TC OUT A
941: J187-1 U189-11	.RS232 TC OUT B
942: U207-3 J183-1	.RS232 TD A
943: J88-1 U189-3	.RS232 TD B
944: U110-12 U109-5 U179-1	.RW
945: U180-9 U114-5	.S CLK 1
946: U178-9 U23-6 U114-6 U228-9	.S CLK 3
*** Run has multiple outputs	
947: JB14-1 RN4-2 U134-12	.SECTOR CLK
948: U33-13 U11-8 JB32-1 RN4-5	.SEEK ERR
949: U80-11 U81-9	.SEL CLK CTRL L
950: U23-1 U23-10 U81-7	.SEL CLK DATA L
951: U159-21 U133-4	.SEL CTC A L
952: U160-21 U133-5	.SEL CTC B L
953: U172-1 U81-11	.SEL DMA FLUSH L
954: U127-11 U44-12	.SEL DMA L
955: U83-5 U81-12	.SEL DMA START L
956: U145-4 U44-13	.SEL FLOPPY L
957: U147-3 U44-15	.SEL GPIB L
958: U126-1 U44-9	.SEL INT L
959: U64-16 U48-16 U124-13 U64-9 U48-9	
959: U81-15	.SEL IOD RD L
960: U85-19 U81-13	.SEL IOD STAT L
961: U83-12 U152-1 U167-1 U81-14	.SEL IOD WR L
962: U172-13 U44-14	.SEL SIO A L
963: U157-35 U44-11	.SEL SIO B L
964: U173-4 U196-8 U211-12	.SEL USEC CLK L

965: U15-3 JA14-1	.SIDE SEL L
966: U127-14 U172-12 U143-14	.SIO ACK L
967: U158-7 U157-6	.SIO INT ENB
968: U127-17 U143-9	.SIO RQST L
969: U37-2 U75-1 U36-1 U56-1	.SM ADDR<0>
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973: U37-12 U75-5 U36-5 U56-5	.SM ADDR<4>
974: U37-15 U75-16 U36-16 U56-16	.SM ADDR<5>
975: U37-16 U75-17 U36-17 U56-17	.SM ADDR<6>
976: U37-19 U75-18 U36-18 U56-18	.SM ADDR<7>
977: U74-5 U75-19 U36-19 U56-19	.SM ADDR<8>
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982: U3-6 U26-3 U5-3 U24-3 U2-3	.SMD ADDR<2>
983: U3-9 U26-4 U5-4 U24-4 U2-4	.SMD ADDR<3>
984: U3-12 U26-5 U5-5 U24-5 U2-5	.SMD ADDR<4>
985: U3-15 U26-16 U5-16 U24-16 U2-16	.SMD ADDR<5>
986: U3-16 U26-17 U5-17 U24-17 U2-17	.SMD ADDR<6>
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988: U6-5 U5-19 U24-19 U2-19 U26-19	.SMD ADDR<8>
989: U158-26 U187-13	.SPEAK DATA IN
990: C126-2 J81-1	.SPEAKER



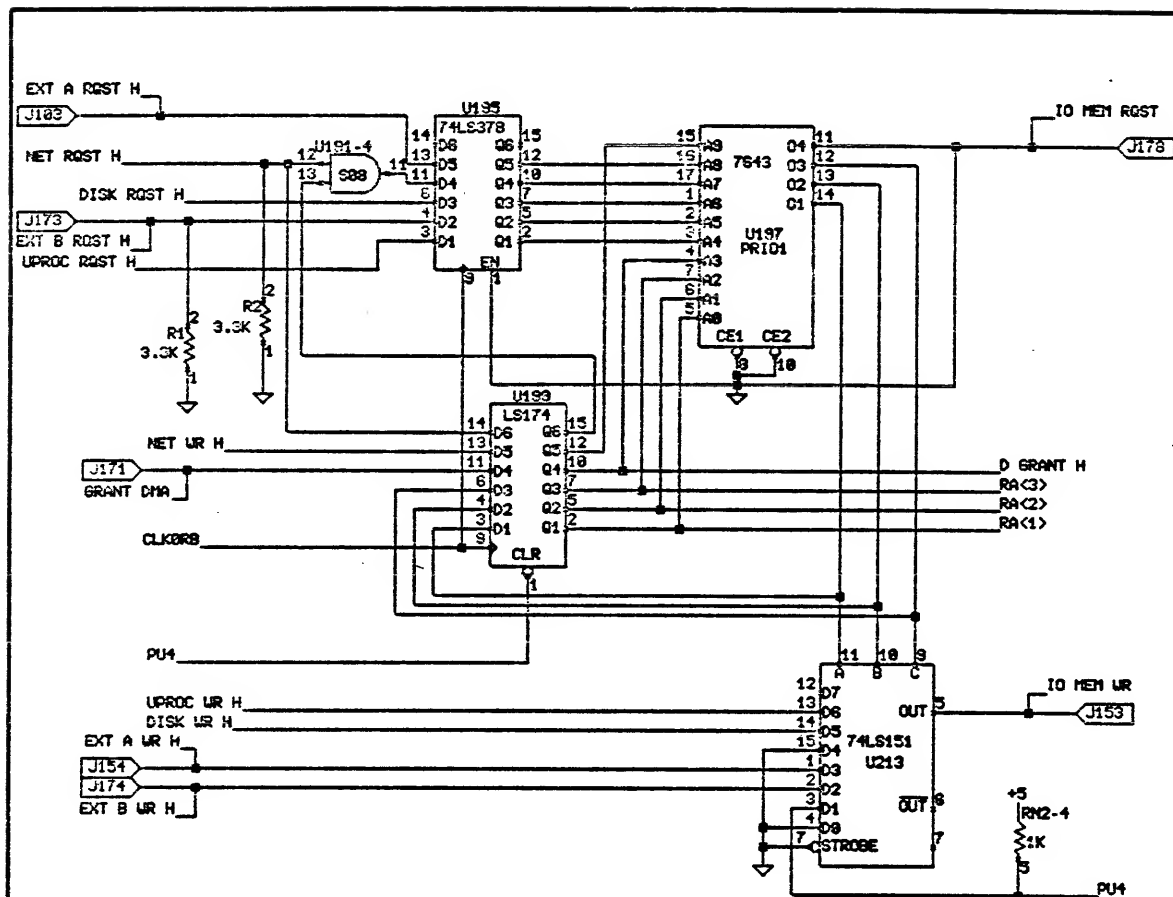
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 992: U143-11 U143-10 U158-30 .SPEECH RQST L  
 993: U143-2 U174-5 .SPEECH SEL L  
 994: U115-12 U119-2 .STEP CRC H  
 995: RN6-3 U15-12 JA36-1 .STEP L  
 996: U40-13 U19-4 U19-12 .SYNC BITS  
 997: U79-2 U78-12 .SYNC L  
 998: U7-12 U9-15 .T BIT  
 999: U7-13 U9-19 .T2 BIT  
 1000: R5-1 J92-1 C103-1 .TABLET CLK  
 1001: R4-2 U112-13 J93-1 .TABLET DATA L  
 1002: U192-12 .TC IN B  
 \*\*\* Only one pin in net  
 \*\*\* Run Has no outputs  
 1003: U80-18 U23-8 .TESTCLK  
 1004: U166-6 U223-17 U224-17 U244-17 U245-17  
 1004: U223-13 U224-13 U244-13 U245-13 .TOP DISK  
 1005: U181-12 J4-1 .TOP EXT A L  
 1006: J73-1 U181-13 .TOP EXT B L  
 1007: U166-8 U169-9 U183-9 U182-9 U184-9  
 1007: U169-16 U183-16 U182-16 U184-16 .TOP NET  
 1008: U166-11 U186-16 U185-16 U171-16 U170-16  
 1008: U170-9 U171-9 U186-9 U185-9 .TOP UPROC  
 1009: U73-1 U111-12 .TRANSMIT H  
 1010: U118-3 U118-11 U124-11 U46-16 U124-3  
 1010: U127-12 U159-18 U159-15 U159-9 U160-18  
 1010: U160-15 U160-9 U147-18 .TZ CLK  
 1011: U90-3 JB12-1 RN4-7 U85-6 U67-11 .UNIT READY  
 1012: U16-9 JA26-1 .UNIT SEL L  
 1013: U200-10 U68-16 .UNLD DISK RQST L

1014: U200-12 J137-1 U193-12	.UNLD EXT A RQST L
1015: U200-13 J37-1	.UNLD EXT B RQST L
1016: U92-11 U155-16 U154-16 U156-16 U153-16	
1016:	.UNLD IN FIFO L
1017: U92-13 U121-13 U120-13	.UNLD NET FIFO L
1018: U201-3 U177-16	.UNLD NET RQST L
1019: U200-9 U194-13	.UNLD UPROC RQST L
1020: U162-4 U129-2	.UPROC ENB
1021: U162-6 J53-1	.UPROC INT L
1022: U161-15 U128-1 U85-13 U83-9	.UPROC RDY
1023: U83-10 U129-7	.UPROC RDY ENB
1024: U83-8 J172-1	.UPROC RDY INT L
1025: U195-3 U194-9	.UPROC RQST H
1026: U213-13 U133-13 U146-1 U174-6	.UPROC WR H
1027: U71-14 U173-6 U132-5	.USEC CLK OVFL H
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1030: U181-2 U180-5 U178-7 U179-6	.WA<2>
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1032: U79-4 U119-10	.WAIT FOR SYNC H
1033: U5-11 U27-2	.WAIT H
1034: U145-21 U175-13 U228-13	.WCLK
1035: U149-15 U216-2	.WCNT L
1036: U216-4 U221-15	.WHI L
1037: U218-15 U217-15 U216-3 U220-15 U219-15	
1037:	.WLO L
1038: U8-10 JB46-1 U8-2 JB42-1	.WR CLK +

1039: U8-9 JB45-1 U8-1 JB43-1 .WR CLK -  
 1040: U40-1 U224-22 U244-22 U245-22 U223-22  
 1040: .WR DATA  
 1041: JB39-1 U10-3 U10-4 .WR DATA +  
 1042: JB40-1 U10-1 U10-2 .WR DATA -  
 1043: JB30-1 U32-18 RN6-5 .WR GATE  
 1044: U146-10 U130-6 U126-2 U159-23 U160-23  
 1044: U147-4 U145-3 U125-1 U23-9 .WR L  
 1045: U148-5 U216-5 .WREG L  
 1046: U114-12 U55-1 U57-1 .X CONST ENB L  
 1047: U73-15 U57-12 U154-15 U153-15 U177-4  
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 1056: U56-13 U114-13 .X SEL<1>

1057: R17-2 R18-1 U198-6	.XMIT BIT STREAM
1058: U95-1 U119-7	.XMIT CLK SEL H
1059: U74-13 U78-13	.XMIT DONE L
1060: U121-22 U120-22 U136-4 U95-6	.XMIT FIFO DATA H
1061: U69-14 U121-9 U198-15 U135-13 U74-9	
1061: U78-3	.XMIT H
1062: U130-12 U74-8	.XMIT L
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1065: U32-5 U52-9 U54-6	.Y MUX<2>
1066: U32-3 U52-11 U54-8	.Y MUX<3>
1067: U55-3 U53-5 U54-11	.Y MUX<4>
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1070: U55-9 U53-11 U54-17	.Y MUX<7>
1071: U56-7 U92-1 U87-3	.Y SEL<0>
1072: U56-8 U92-2 U87-6	.Y SEL<1>
1073: U56-9 U92-3 U87-10	.Y SEL<2>
1074: U56-11 U32-19 U55-19 U87-13	.Y SEL<3>
1075: U46-18 U144-6 R3-2 U158-20 U157-20	
1075:	.Z CLK
1076: RN8-4 U144-16 U126-17 U158-5 U157-5	
1076:	.Z80 INT L
1077: RN8-2 U144-24 U127-6	.Z80 WAIT L





	RA/UA	RUA/ CHANNEL	HDR ADDR	DATA ADDR
(Unused)	7	-	-	-
Uproc	6	1	14	15
Disk	5	2	12	13
Net Mail	4	3	10	11
Ext A	3	4	6	7
Ext B	2	5	4	5
Net Rev	1	6	2	3
Idle	0	7	/load RAM	

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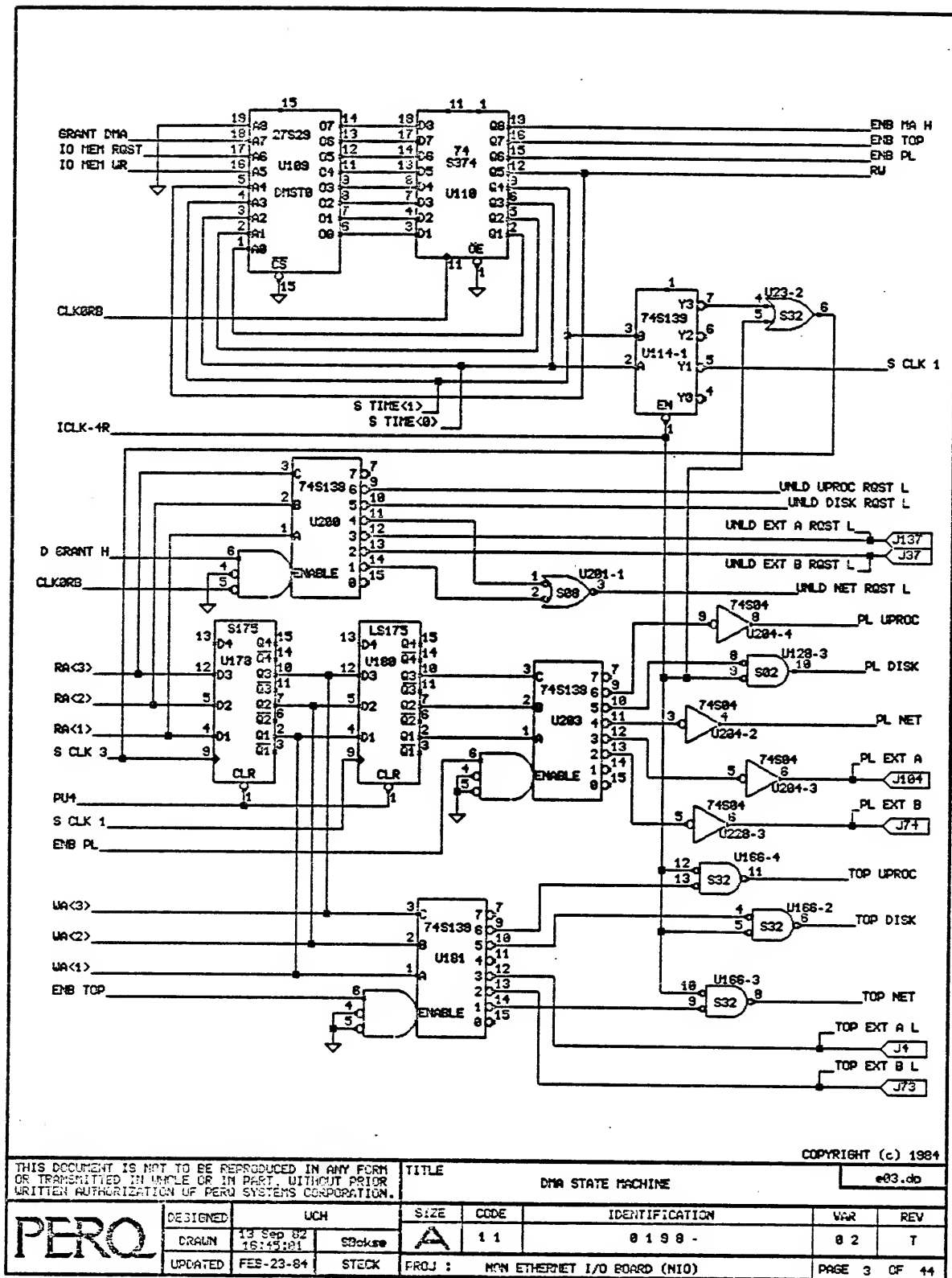
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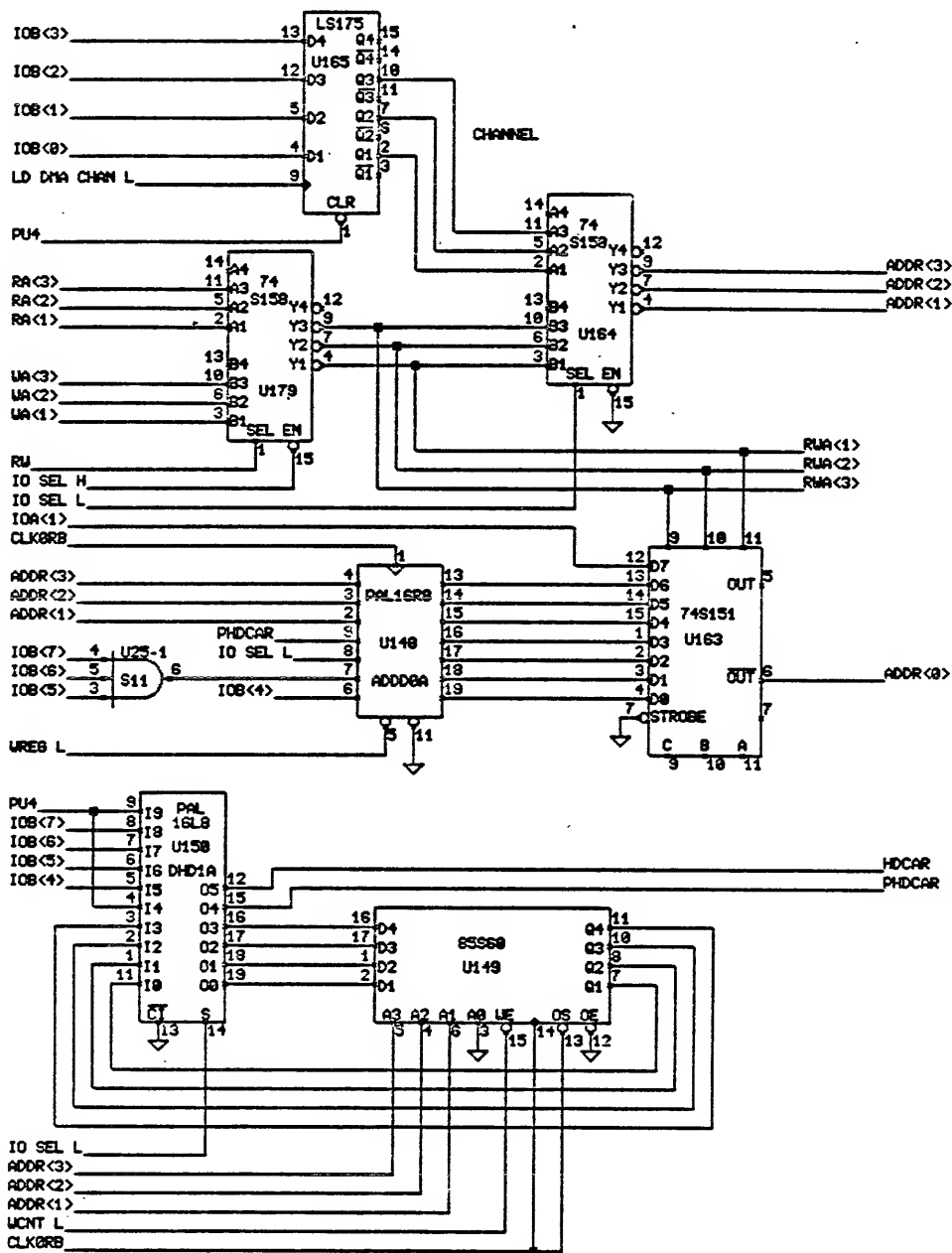
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PROJ : NON ETHERNET I/O BOARD (NIO)			PAGE 2	OF 55

**PERQ**

DESIGNED	WCH
DRAWN	19 Sep 82 15:45:01
UPDATED	FEB-23-84

EEokse
STECK





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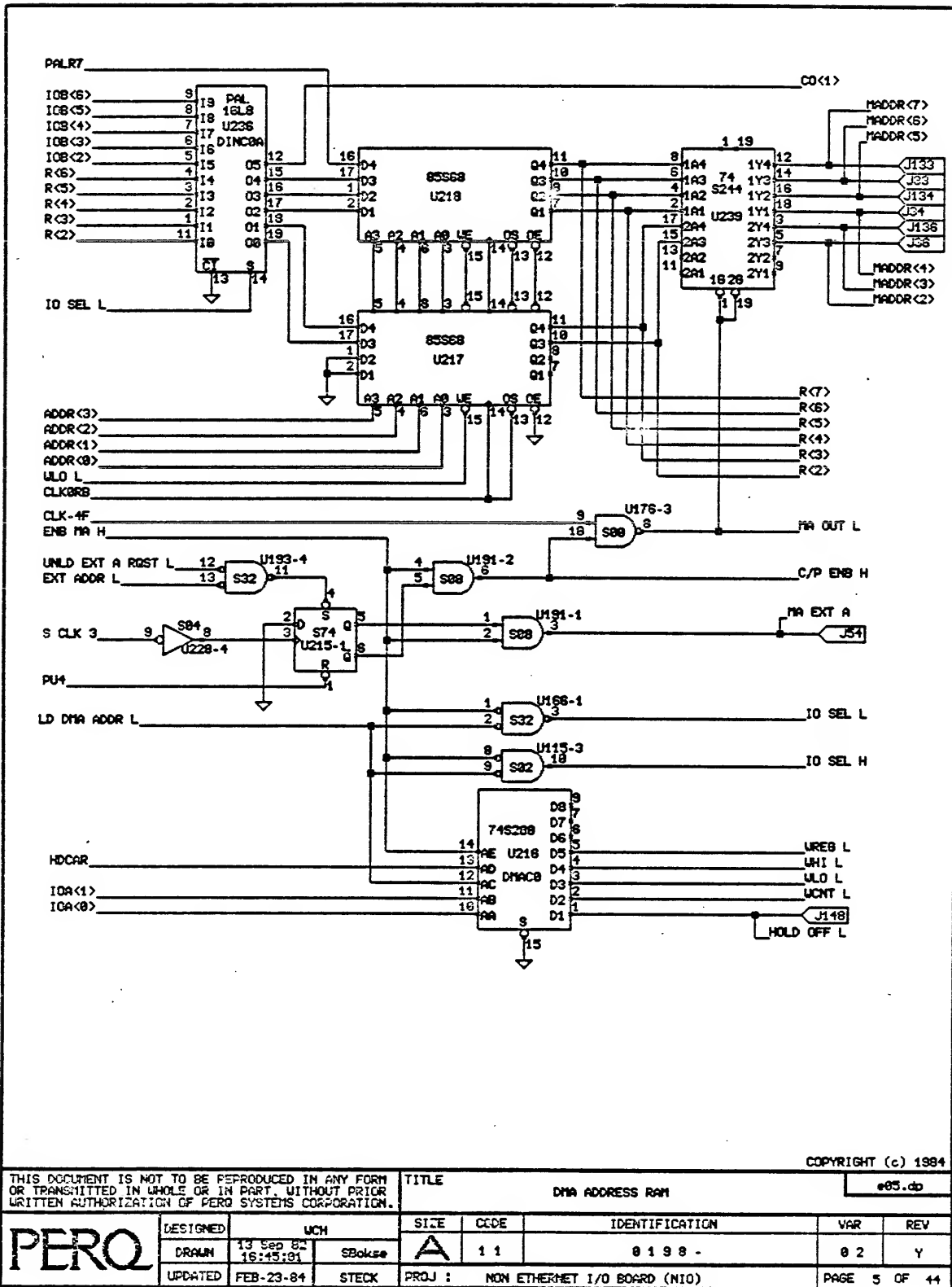
RAM ADDRESSING

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e04.db

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TITLE

DMA ADDRESS RAM

e05.db

**PERO**

DESIGNED

MCH

SIZE

CODE

IDENTIFICATION

VAR

REV

DRAWN

13 Sep 82

15:45:01

SBokse

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11

0198-

02

Y

UPDATED

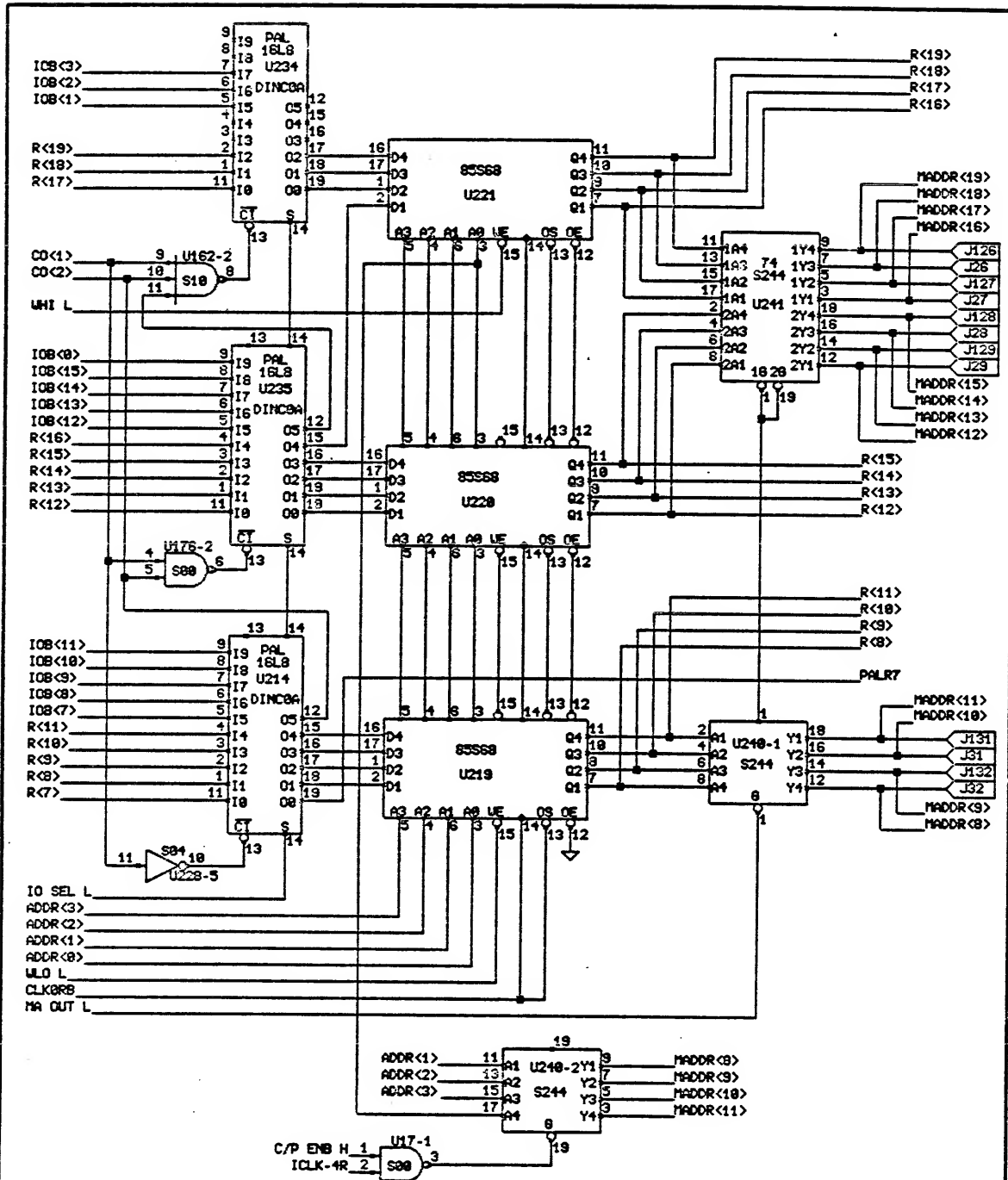
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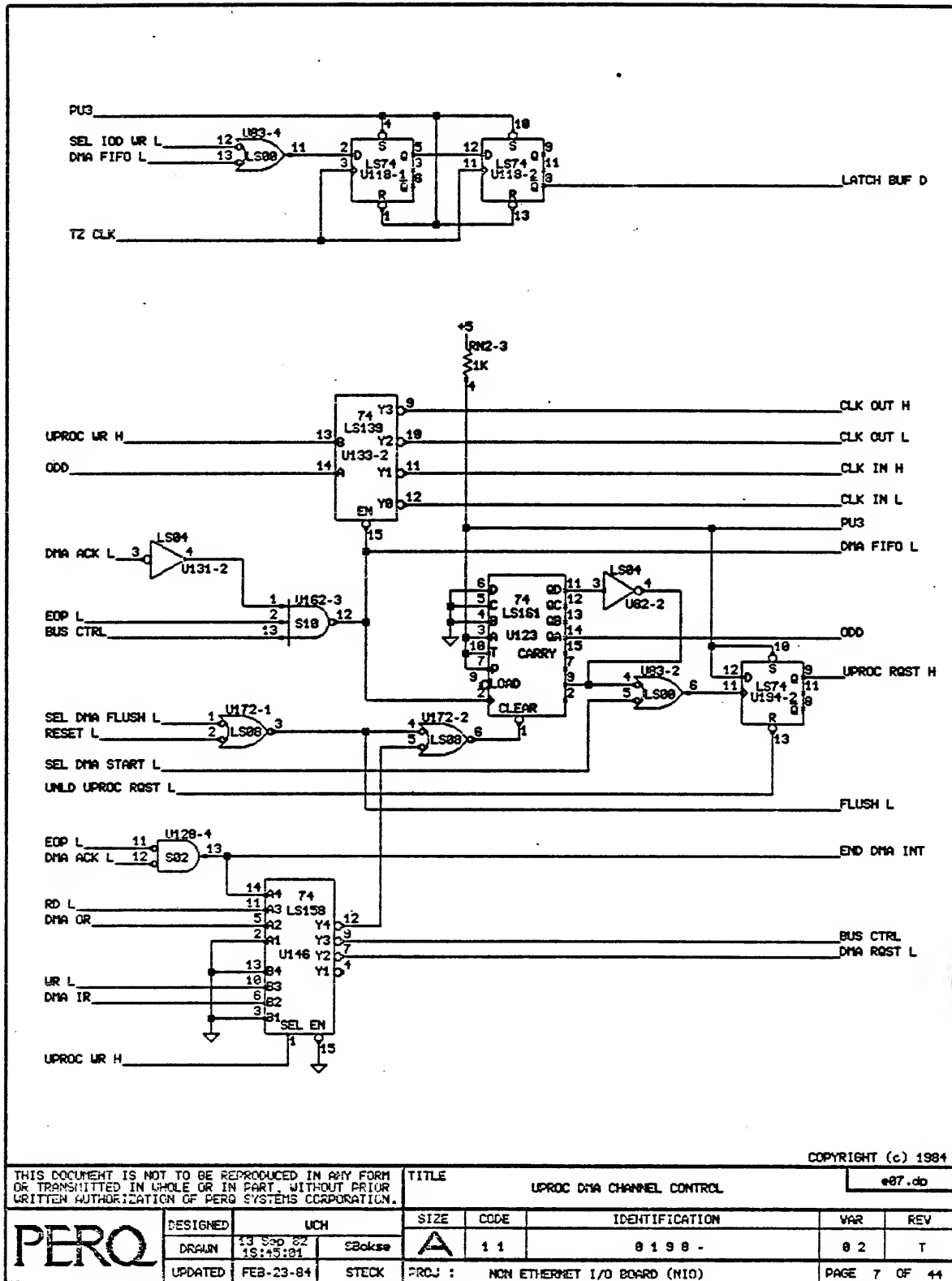
NON ETHERNET I/O BOARD (NIO)

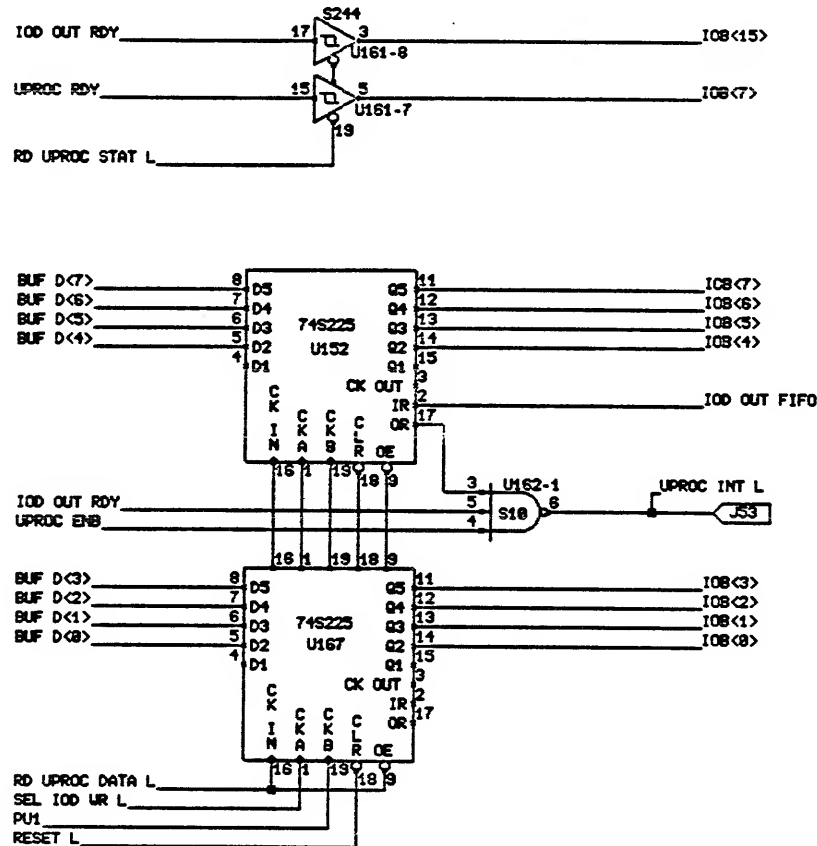
PAGE 5 OF 44



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UPDATED: FEB-23-84 STECK				PROJ :		NON ETHERNET I/O BOARD (NIO)		PAGE 6 OF 44	

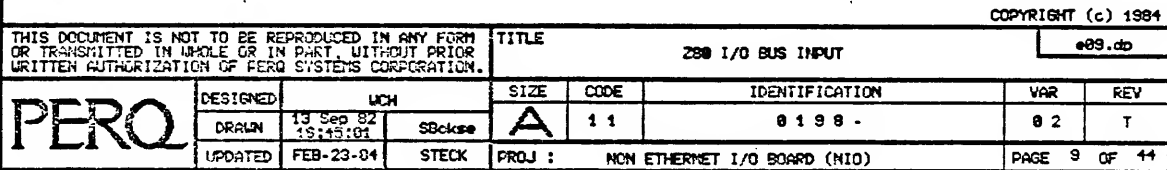
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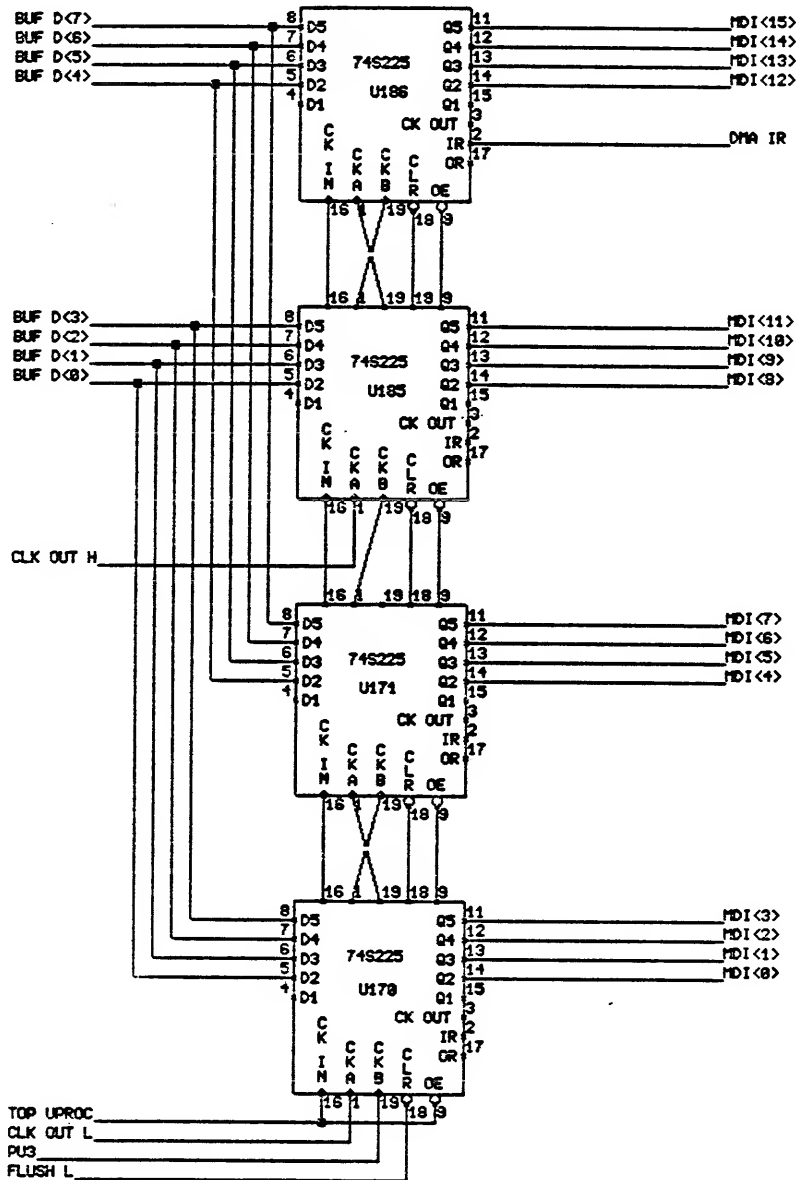




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				PROJ : NON ETHERNET I/O BOARD (NIO)					PAGE 8 OF 44		





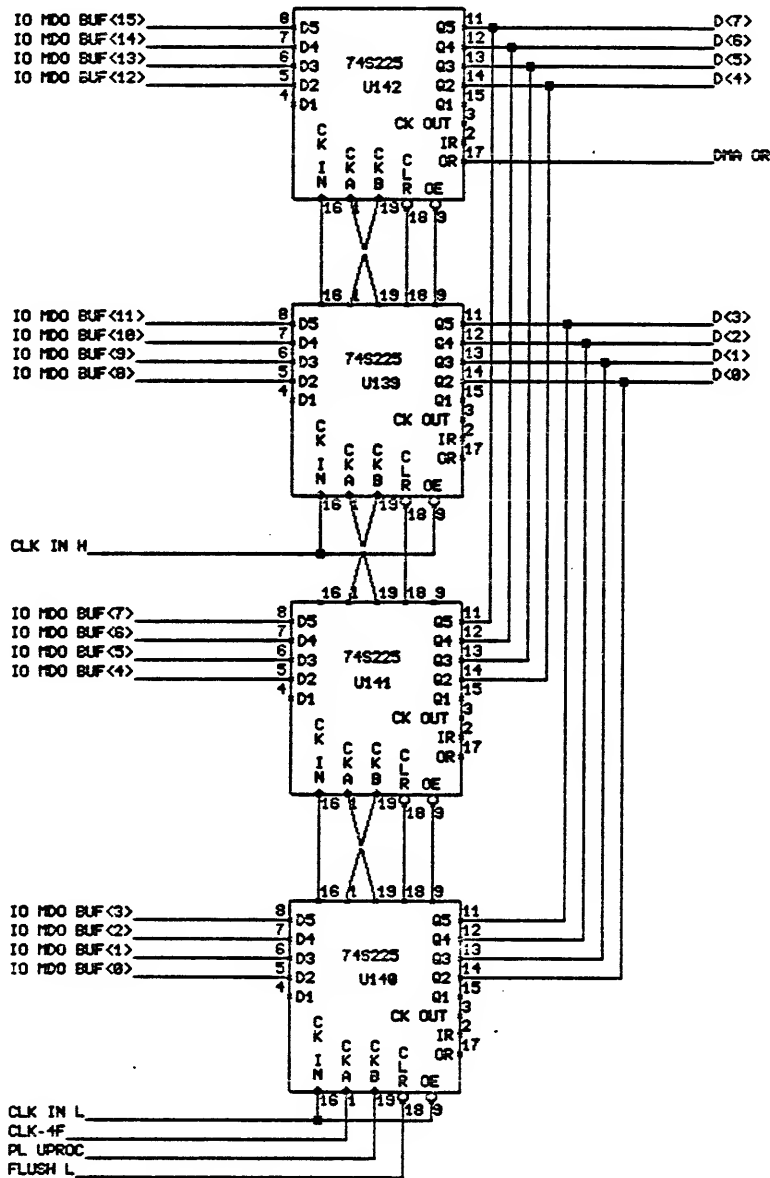
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TITLE 280 MEMORY BUS OUTPUT

e18.dp

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TITLE

280 MEMORY BUS INPUT

e11.db

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e12.sp

PERQ

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VAR	REV
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PAGE 12	OF 44





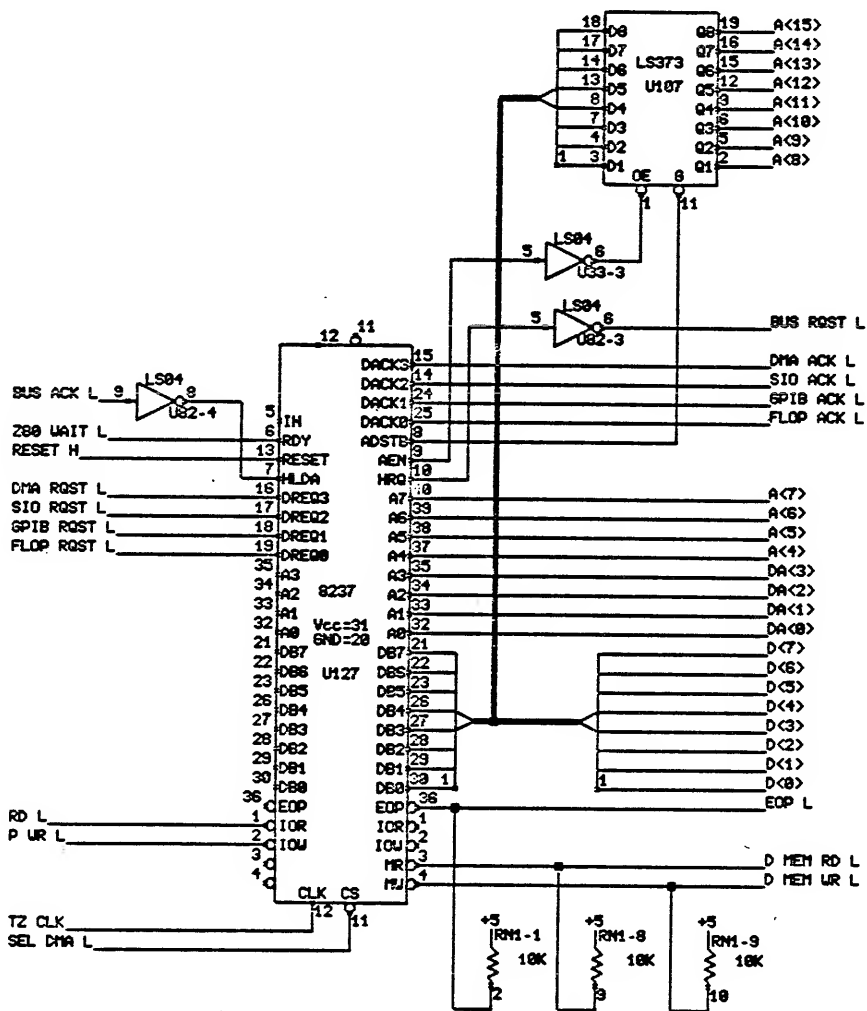
e13.dta

# PERQ

SIZE	CODE
A	1 1
PROJ :	NON

IDENTIFICATION
0198 -
ETHERNET I/O BOARD (NIO)

VAR	REV
0 2	T
PAGE 13 OF 44	



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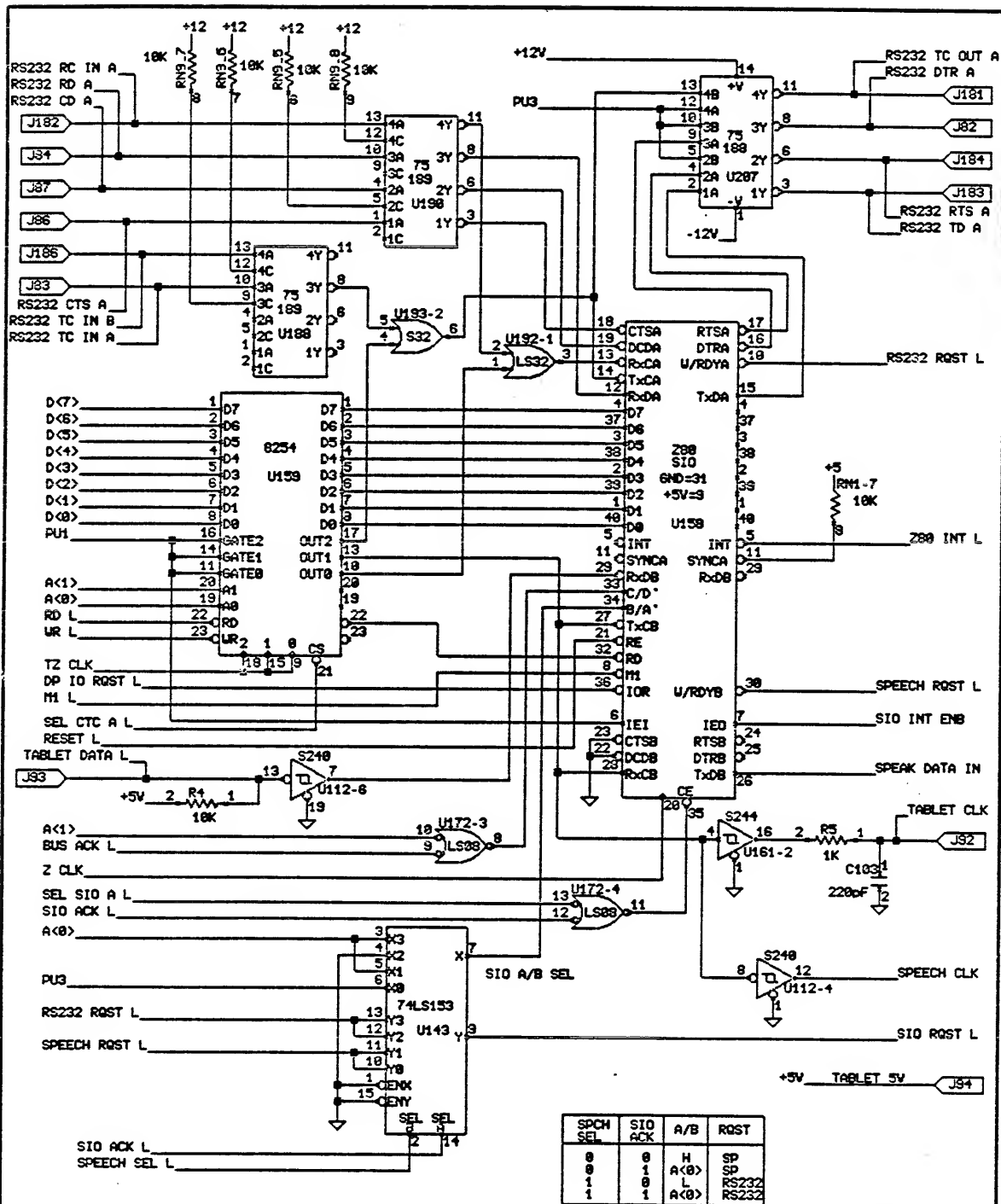
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TITLE

Z80 DMA

e14.dp

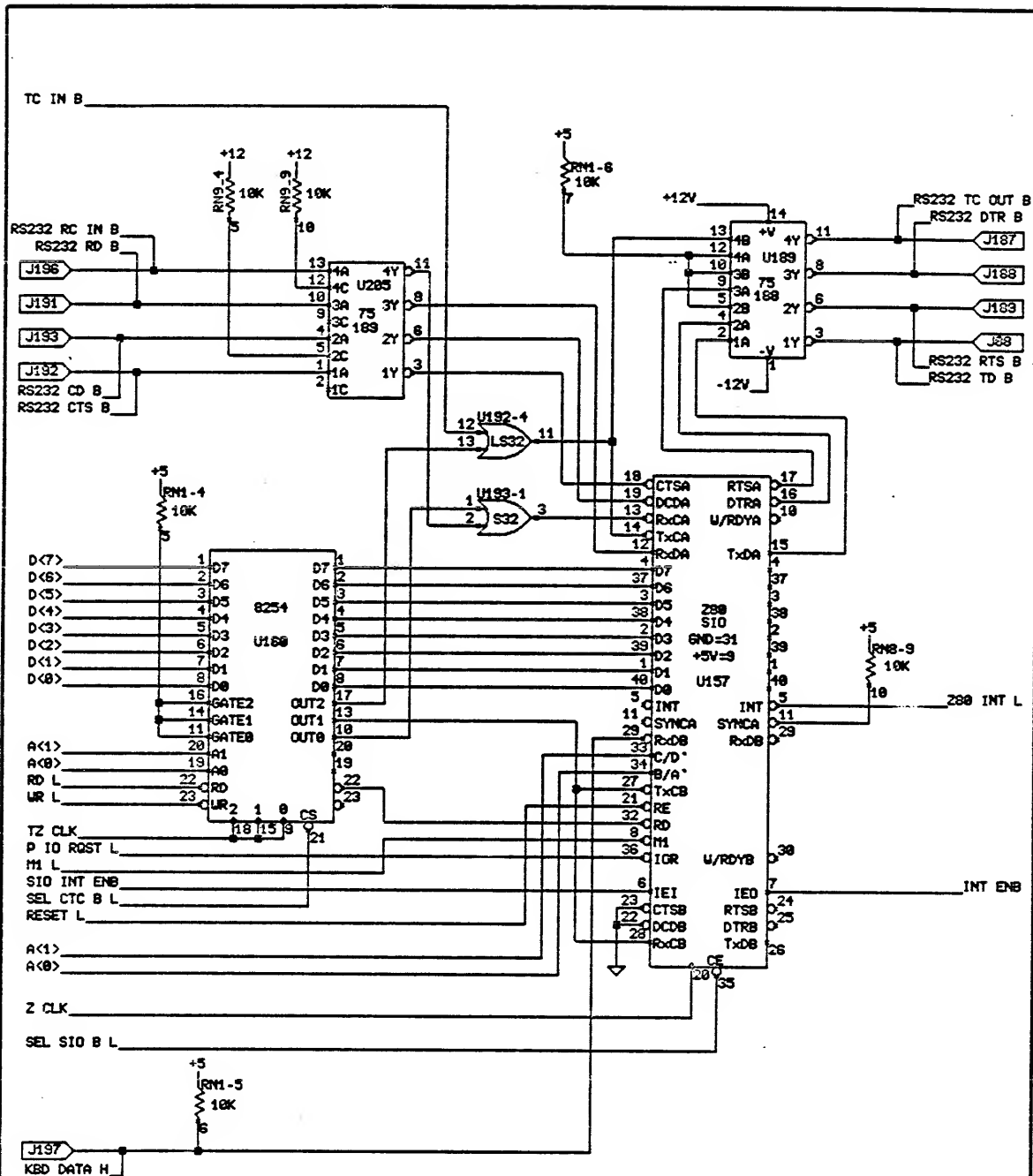
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	UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE 14	OF 44



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TITLE 280 SERIAL I/O e15.dp

DESIGNED	UCH	SIZE	CODE	IDENTIFICATION	VAR	REV
DRAWN	13 Sep 82 16:45:01	A	1 1	0 1 9 8 -	0 2	V
UPDATED	MAY-24-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE 15 OF 44	



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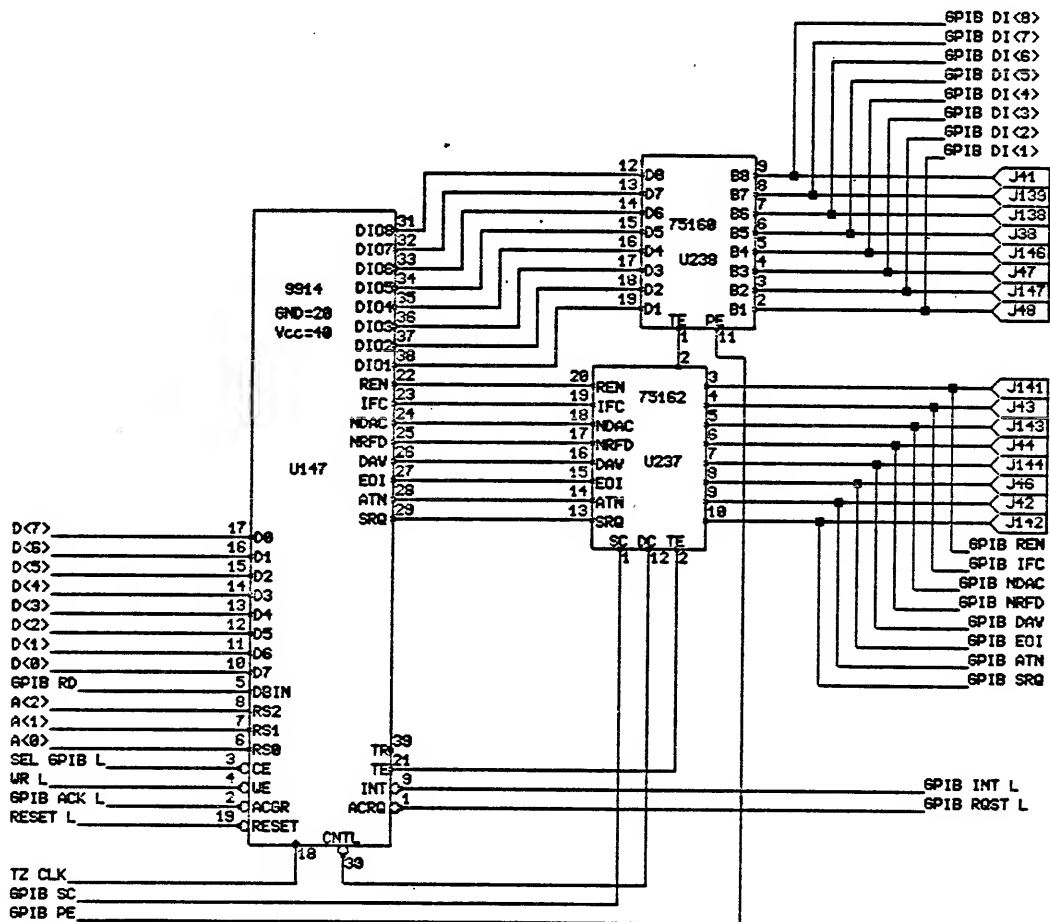
TITLE

Z80 SERIAL IO

e16.db

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UPDATED	MAY-24-84	STECK	PROJ :	NON ETHERNET I/O BOARD (N10)		PAGE 16 OF 44

PERQ



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TITLE

Z80 SPIB I/O

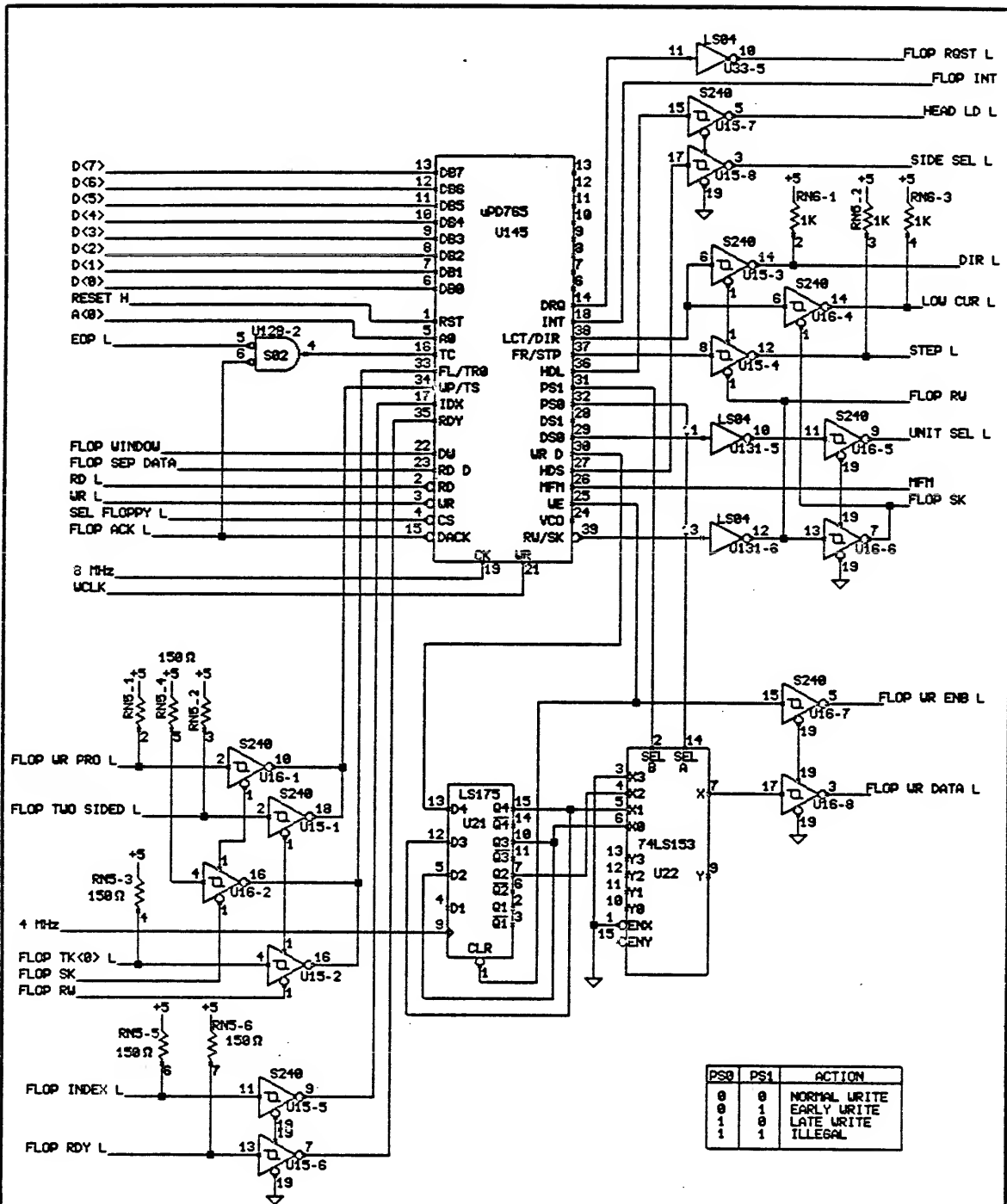
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e17.db

PERQ

DESIGNED	WCH
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UPDATED	FEB-23-84 STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
A	1 1	0 1 9 8 -	0 2	T
PROJ : NON ETHERNET I/O BOARD (NIO)			PAGE 17 OF 44	



PS0	PS1	ACTION
0	0	NORMAL WRITE
0	1	EARLY WRITE
1	0	LATE WRITE
1	1	ILLEGAL

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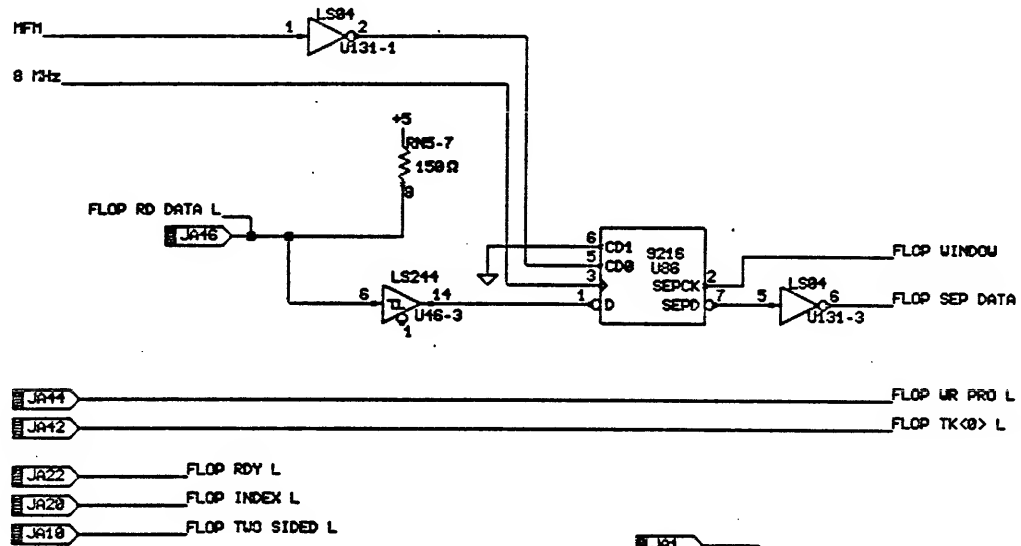
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Z80 FLOPPY

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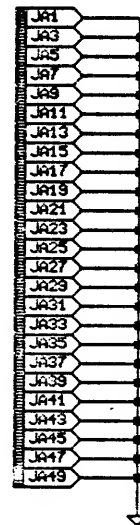
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UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (H10)		PAGE 18 OF 44

PERQ



FLOP UR ENB L  
 FLOP UR DATA L  
 STEP L  
 DIR L  
 UNIT SEL L  
 HEAD LD L  
 SIDE SEL L  
 LOW CUR L



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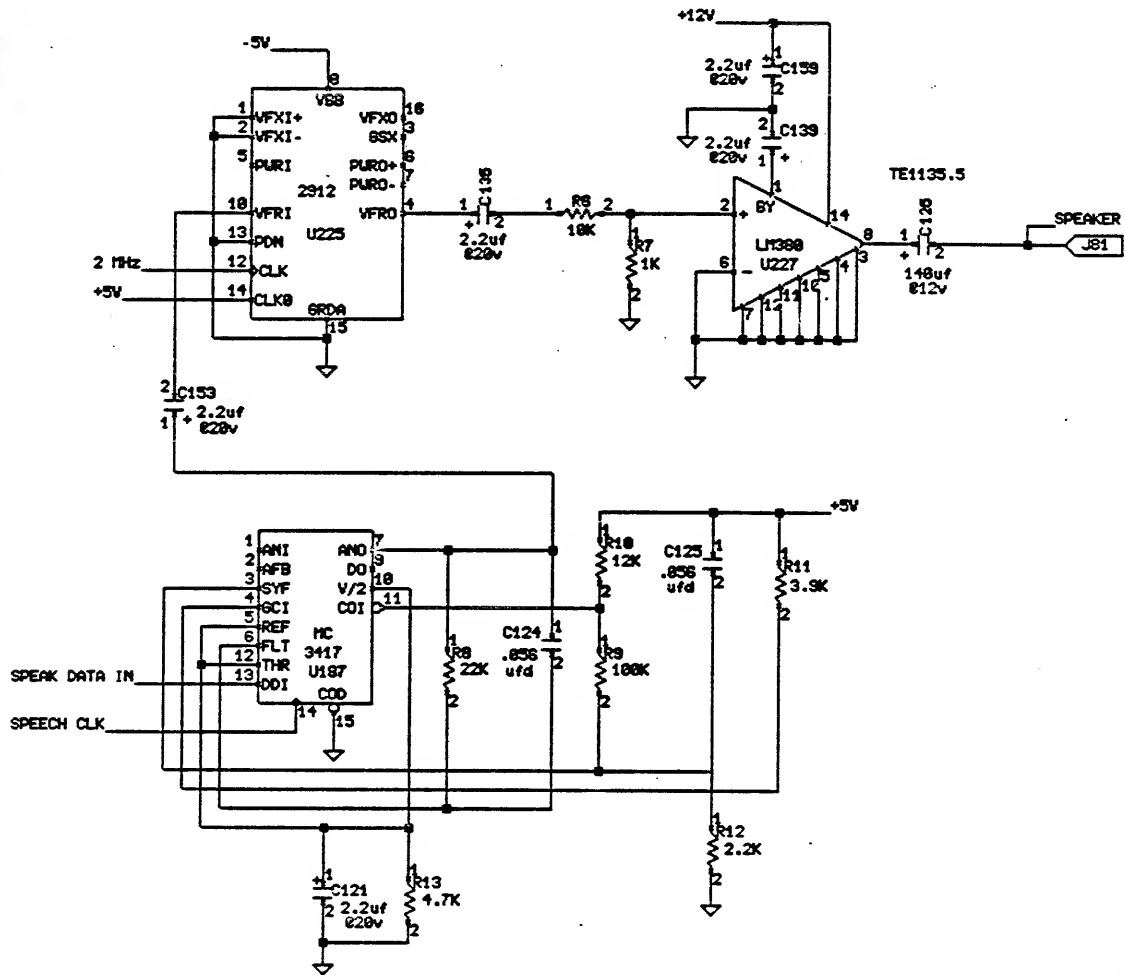
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TITLE

FLOPPY DISK CONNECTOR

e19.db

PERQ	DESIGNED	UCH	SIZE	CODE	IDENTIFICATION	VAR	REV
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	UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)		PAGE 19 OF 44



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TITLE

CVSD DEMODULATOR

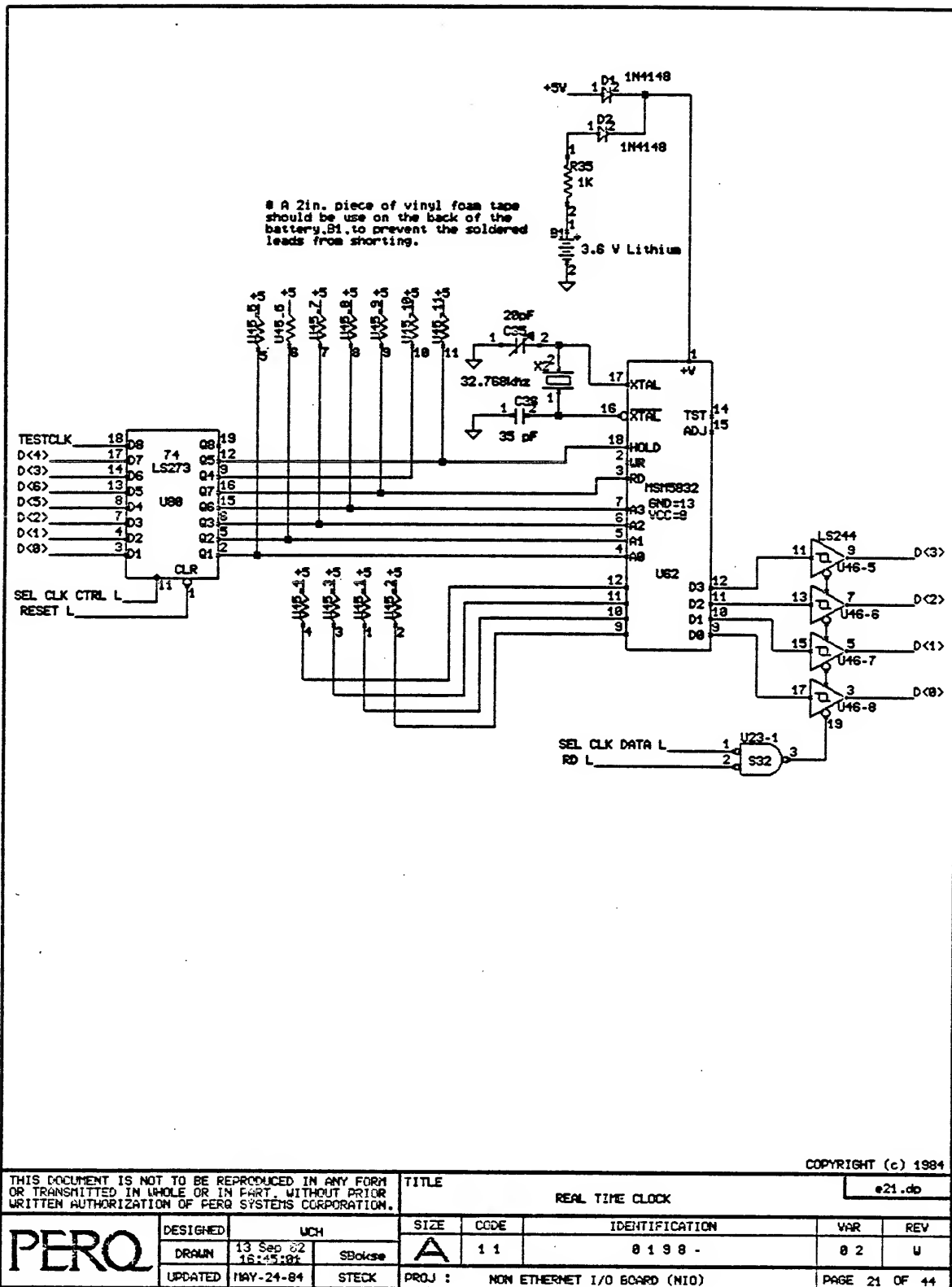
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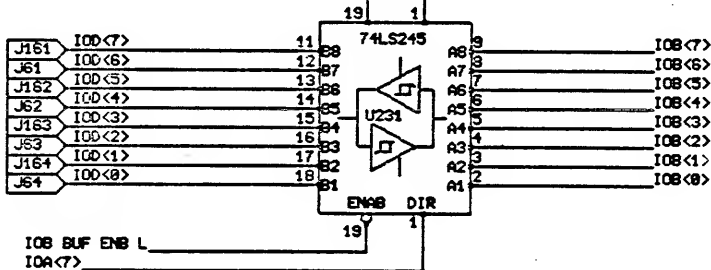
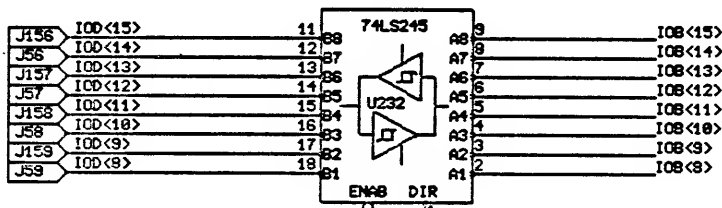
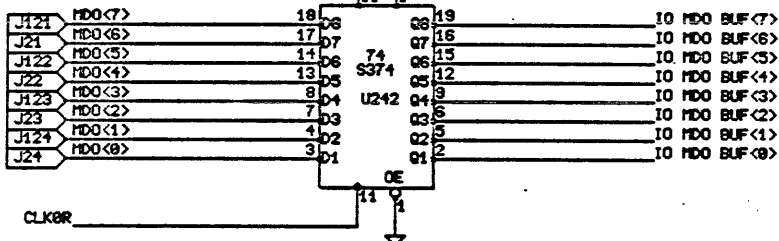
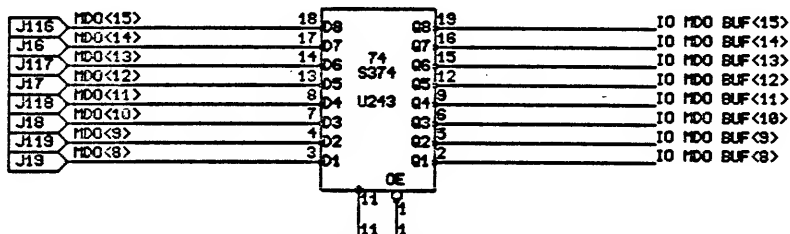
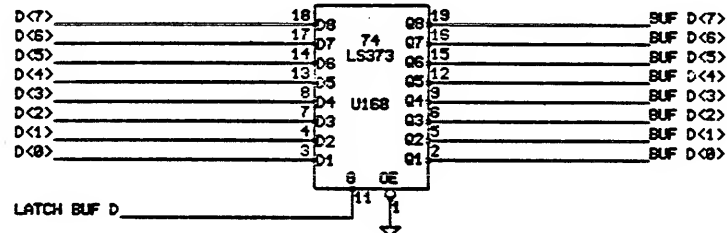
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DESIGNED	UCH
DRAWN	13 Sep 82 16:45:01 SBokse
UPDATED	FEB-23-84 STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
A	1 1	0 1 9 8 -	0 2	T
PROJ : NON ETHERNET I/O BOARD (NIO)			PAGE 28 OF 44	







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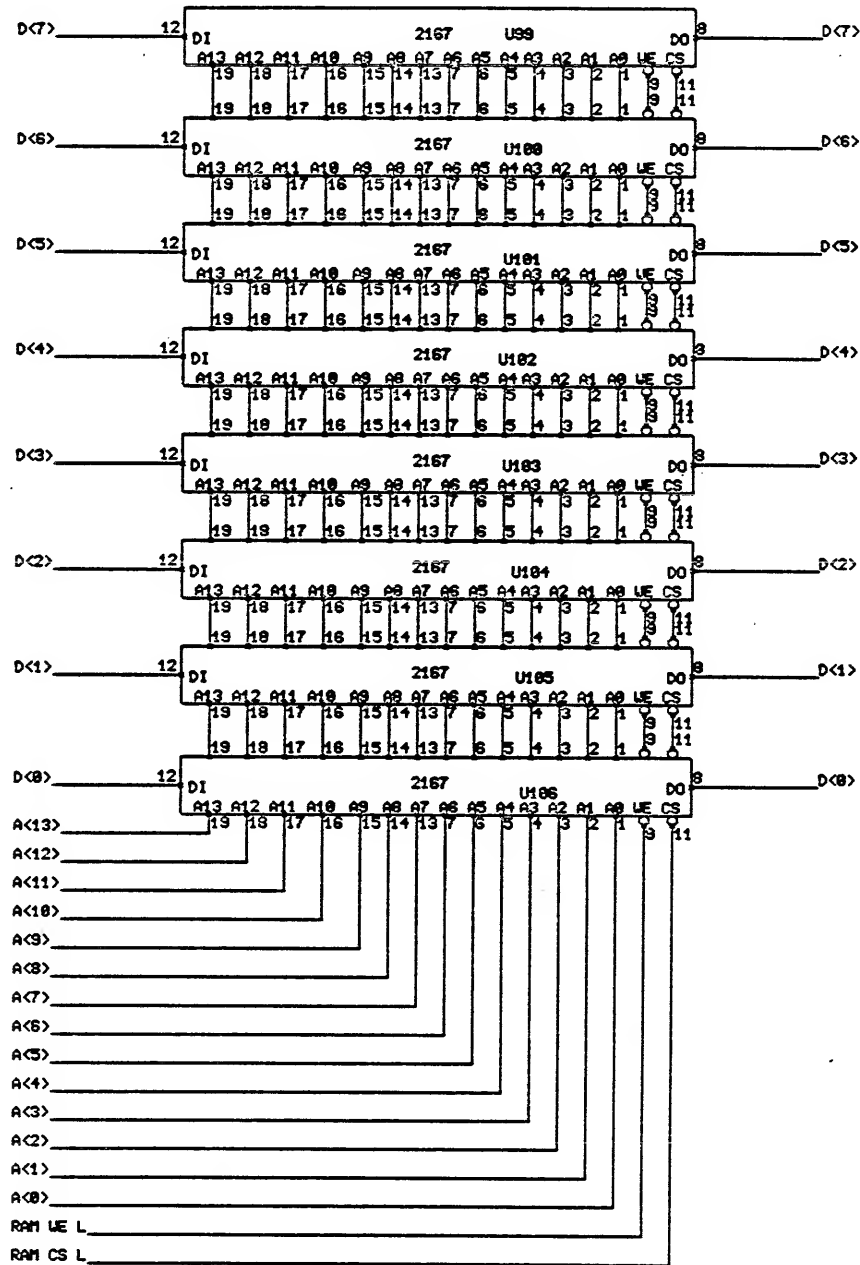
TITLE

EIO BUS BUFFERS

e22.dp

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UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE 22	OF 44

PERQ

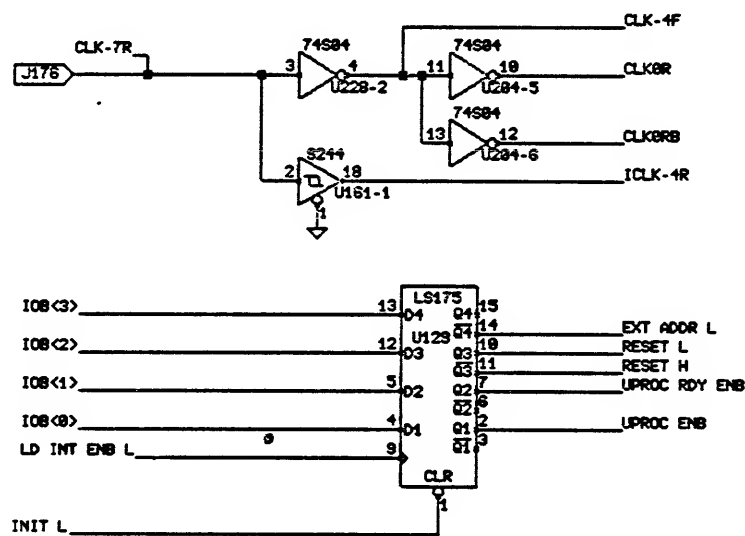


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TITLE			280 RAM		COPYRIGHT (C) 1987 e23.db	
SIZE	CODE	IDENTIFICATION		VAR	REV	
A	1 1	0 1 9 8 -		0 2	T	
PROJ : NON ETHERNET I/O BOARD (NIO)				PAGE 23 OF 44		

PERQ	DESIGNED	UCH	
	DRAWN	13 Sep 82	Sbokse
	UPDATED	FEB-23-84	STECK



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TITLE

IO BUS CONTROL & SYSTEM CLOCKS

e24.db

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UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE 24	OF 44

PERQ



**TITLE**

288 CLOCKS

e25.cda

PERO

DESIGNED	
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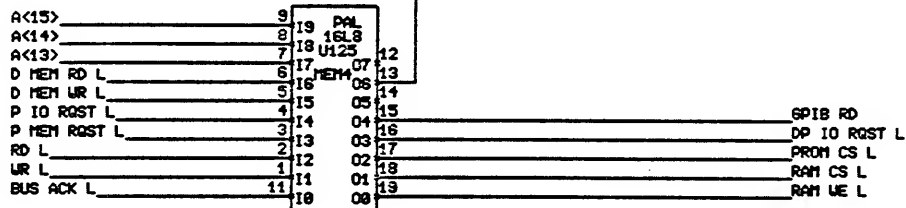
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SBokse	A
STECK	PROJ :

CODE	IDENTIFICATION
11	0198-

NON ETHERNET I/O BOARD (NIO)

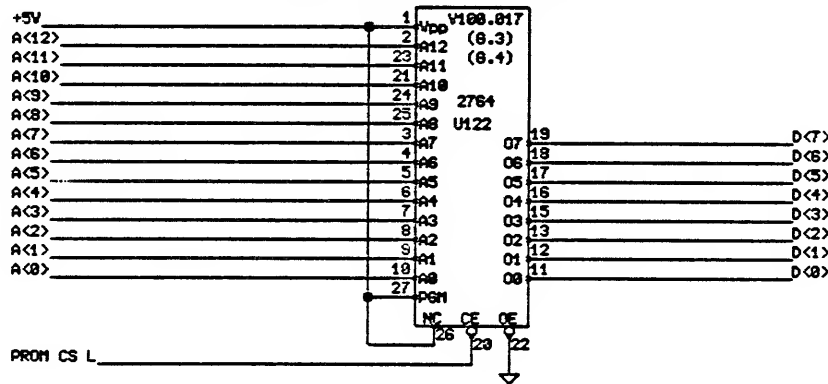
VAR	REV
0 2	T
PAGE 25 OF 44	

END DMA INT



#### 286 BOOT PROM

(FOR 6.3 & 6.4 SOFTWARE, USE PROM V100.017)



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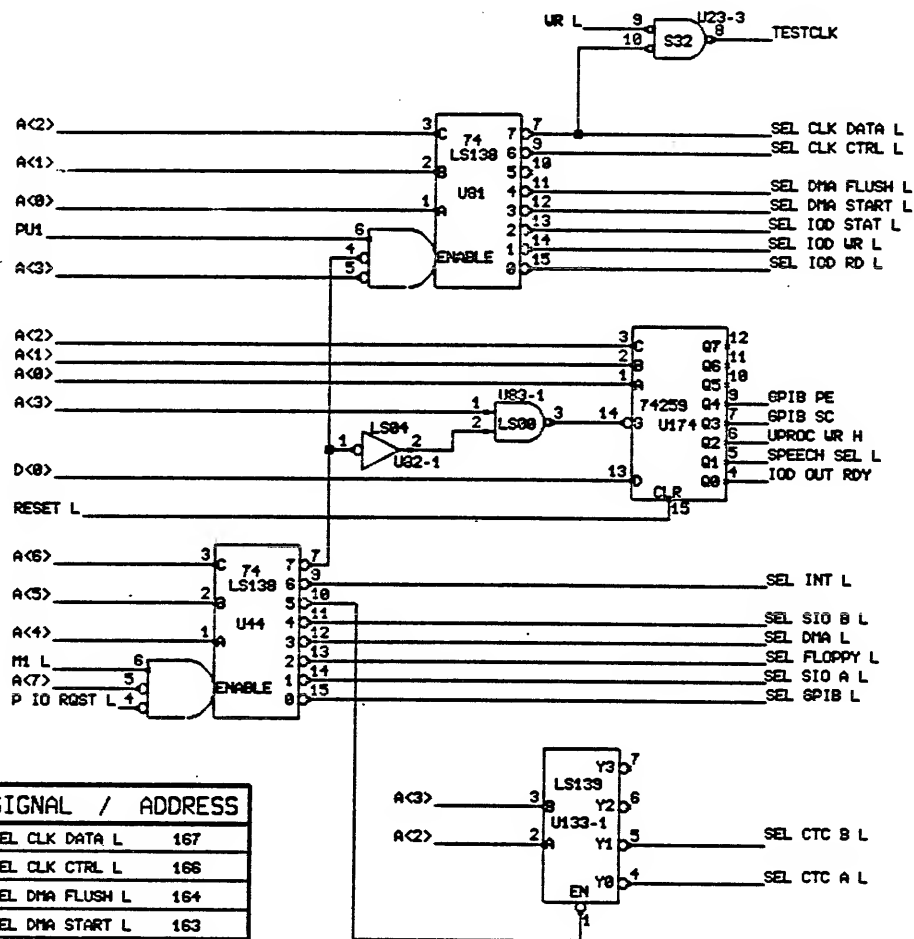
MEMORY CONTROL

e26.db

**PERQ**

DESIGNED	UCH
DRAWN	13 Sep 82
UPDATED	16:45:01
	SBokse
	STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
A	1 1	0 1 9 8 -	0 2	T
PROJ :	NON ETHERNET I/O BOARD (NIO)			PAGE 26 OF 44



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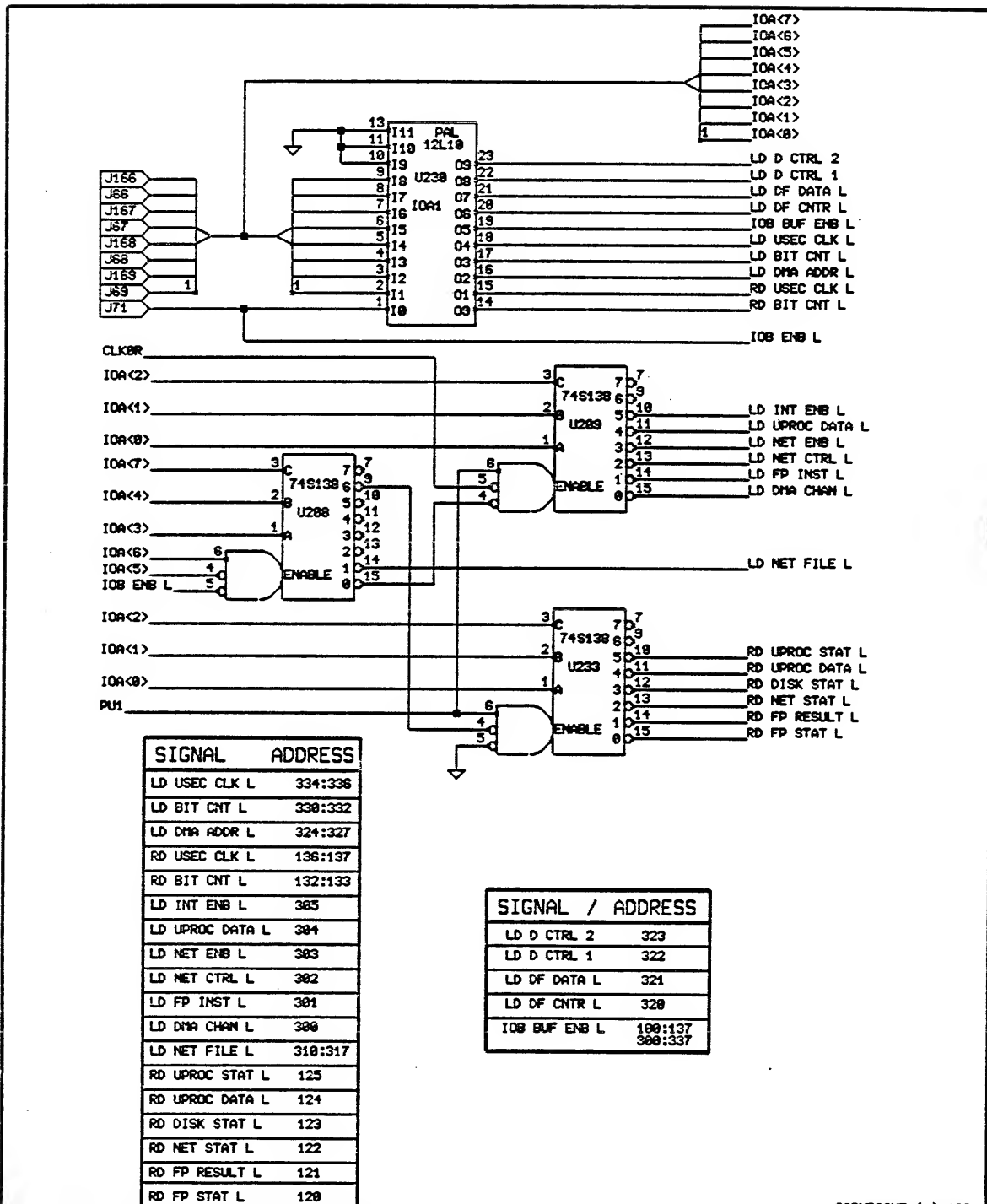
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TITLE

Z80 ADDRESS DECODE

e27.doc

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	UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (N10)		PAGE 27 OF 44



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TITLE

IOA DECODES

e28.db

PERQ

DESIGNED	WCH
DRAWN	13 Sep 82 16:45:01
UPDATED	FEB-23-84

SBolcke

STECK

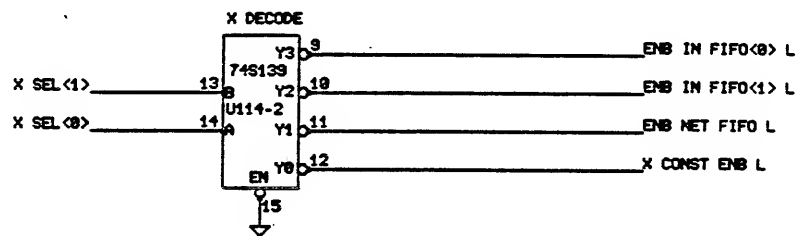
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PROJ : NON ETHERNET I/O BOARD (NIO)

VAR	REV
0 2	T

PAGE 28 OF 44





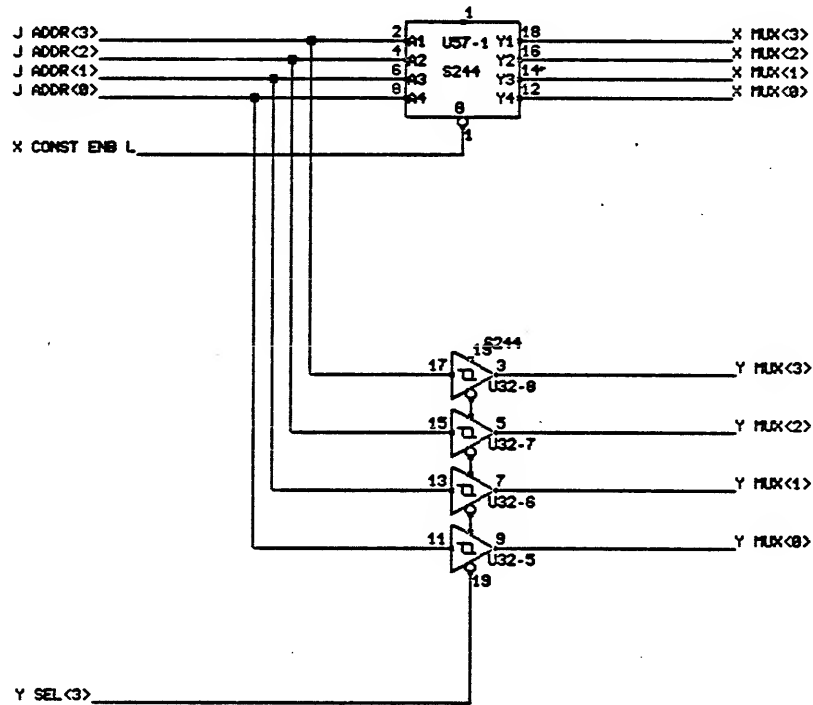
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TITLE  
STATE MACHINE

e29.db

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	UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE 29	OF 44



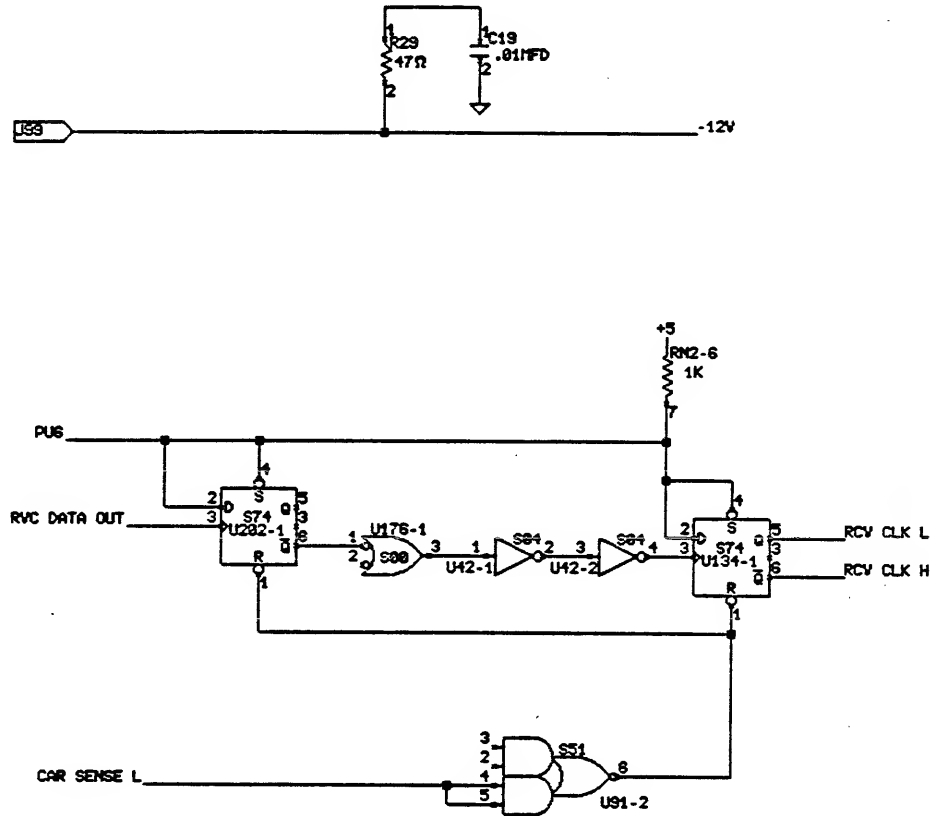
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TITLE  
NET CONTROLLER CONSTANTS

e38.db

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	UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE 38 OF 44	



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TITLE

DATA RECOVERY

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e31.db

**PERQ**

DESIGNED	UCH
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UPDATED	FEB-23-84 STECK

SIZE	CODE	IDENTIFICATION
A	1 1	0 1 9 8 -
PROJ :		MCN ETHERNET I/O BOARD (NIO)

VAR	REV
0 2	T
PAGE 31 OF 44	



TITLE
-------

NET BIT COUNTER

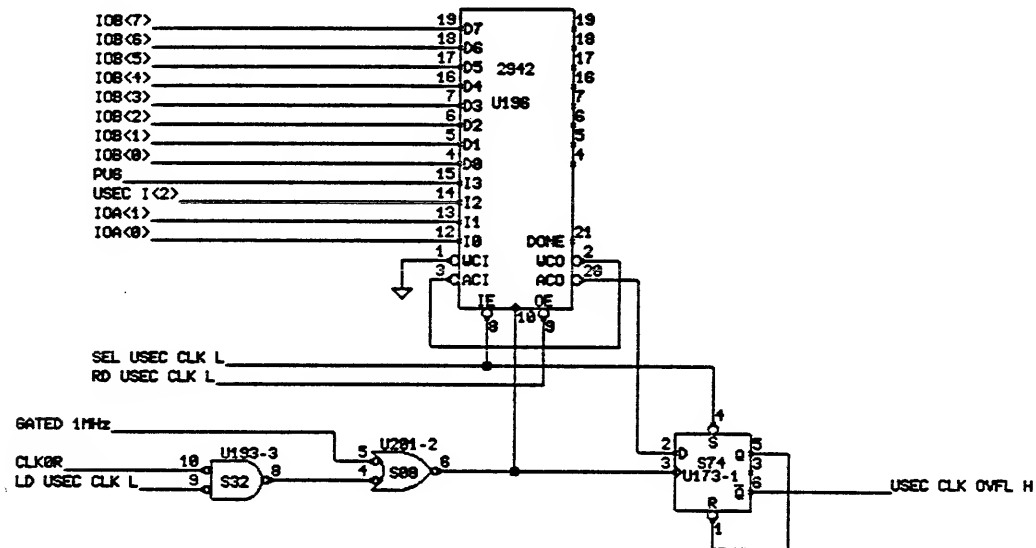
e32.dp

PERO

**TITLE**

e33.dp

# PERO



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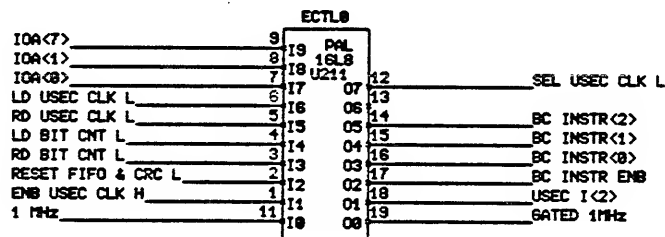
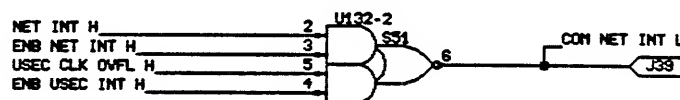
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MICROSECOND CLOCK						e34.db
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UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)		PAGE 34 OF 44

PERQ

DESIGNED UCH  
DRAWN 13 Sep 82  
UPDATED FEB-23-84

SIZE CODE IDENTIFICATION VAR REV  
A 1 1 0 1 9 8 - 0 2 T  
PROJ : NON ETHERNET I/O BOARD (NIO) PAGE 34 OF 44



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TITLE						
NET CONTROLLER						e35.db
DESIGNED	DATE	BY	SIZE	CODE	IDENTIFICATION	VAR REV
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UPDATED	FEB-23-84	STECK	PROJ : NON ETHERNET I/O BOARD (NIO)			PAGE 35 OF 44

**PERQ**

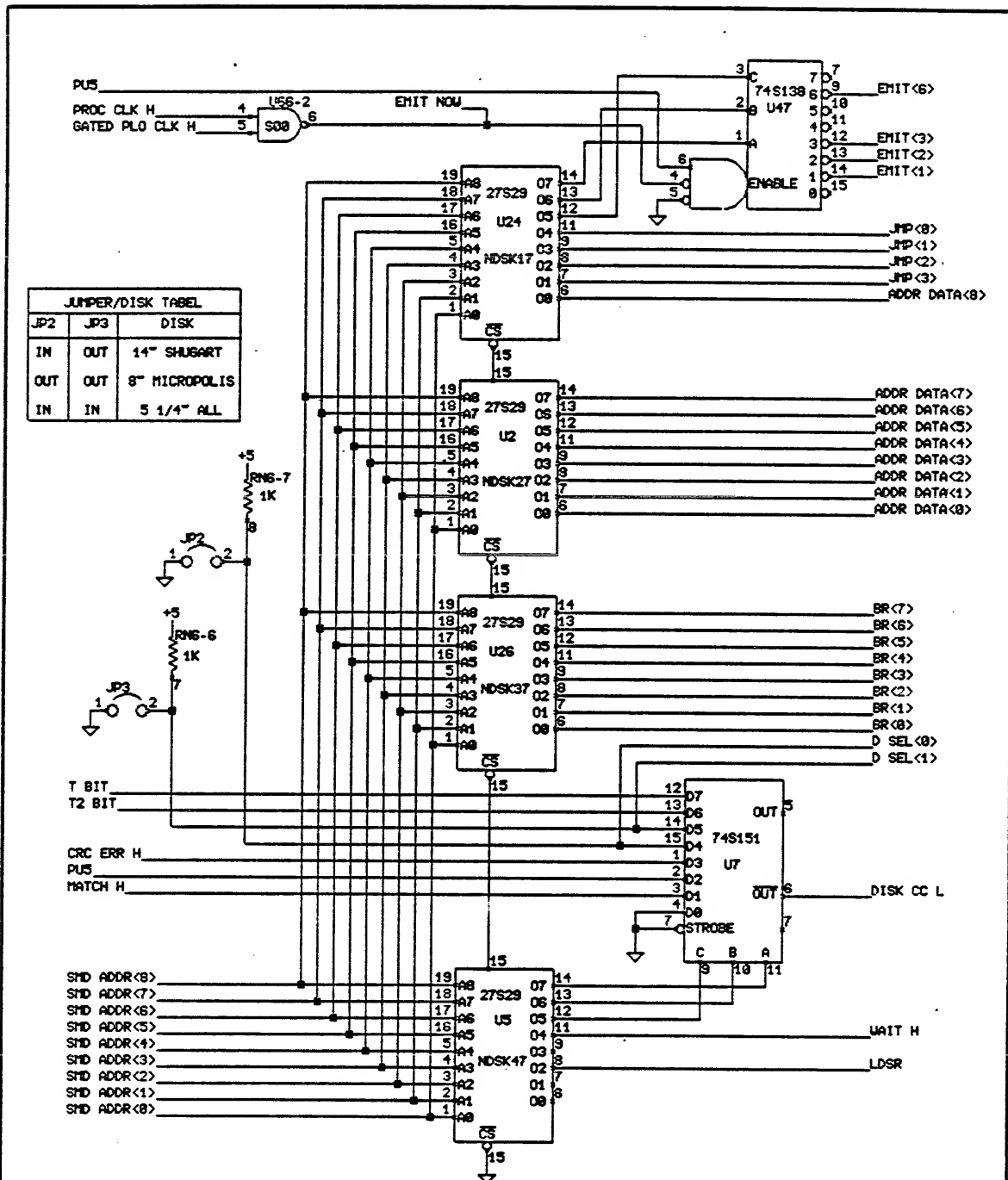


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•36.dj

PERO





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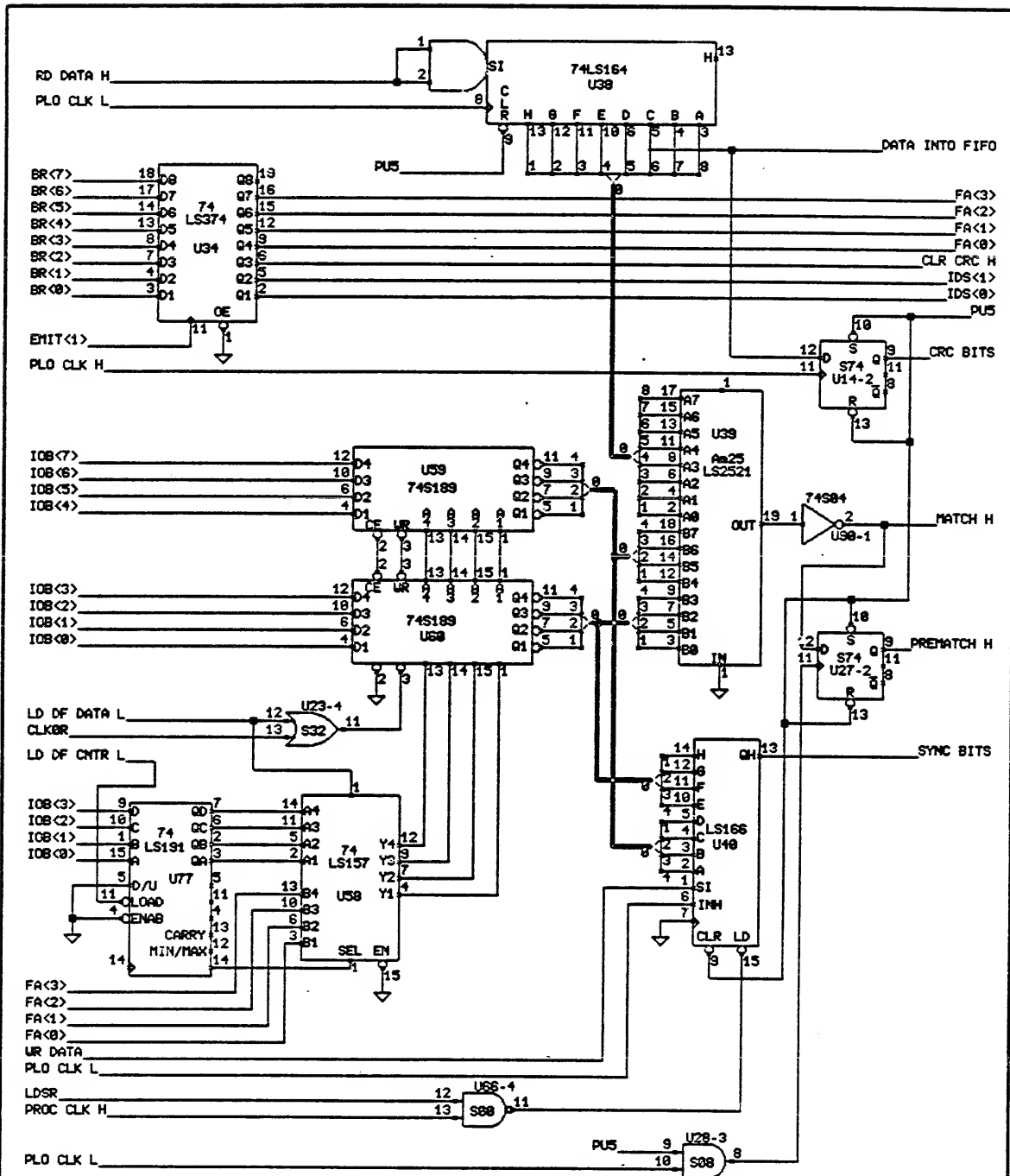
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TITLE

DISK STATE MACHINE

e37.db

PERQ	DESIGNED	WCH	SIZE	CODE	IDENTIFICATION	VAR	REV
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	UPDATED	JUNE/11/84	STECK	PROJ : NON ETHERNET I/O BOARD (NIO)			PAGE 37 OF 44



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TITLE

DISK REGISTER FILE

e38.db

**PERQ**

DESIGNED	UCH
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UPDATED	AUG/10/84

SBokse
STECK

SIZE  
**A**

CODE  
1 1

IDENTIFICATION

0 1 9 8 -

VAR

0 2

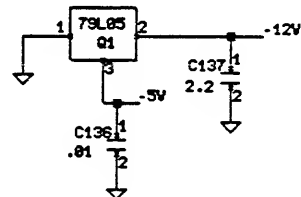
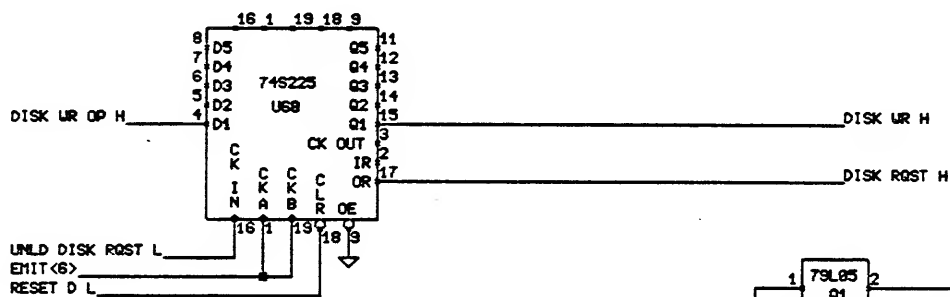
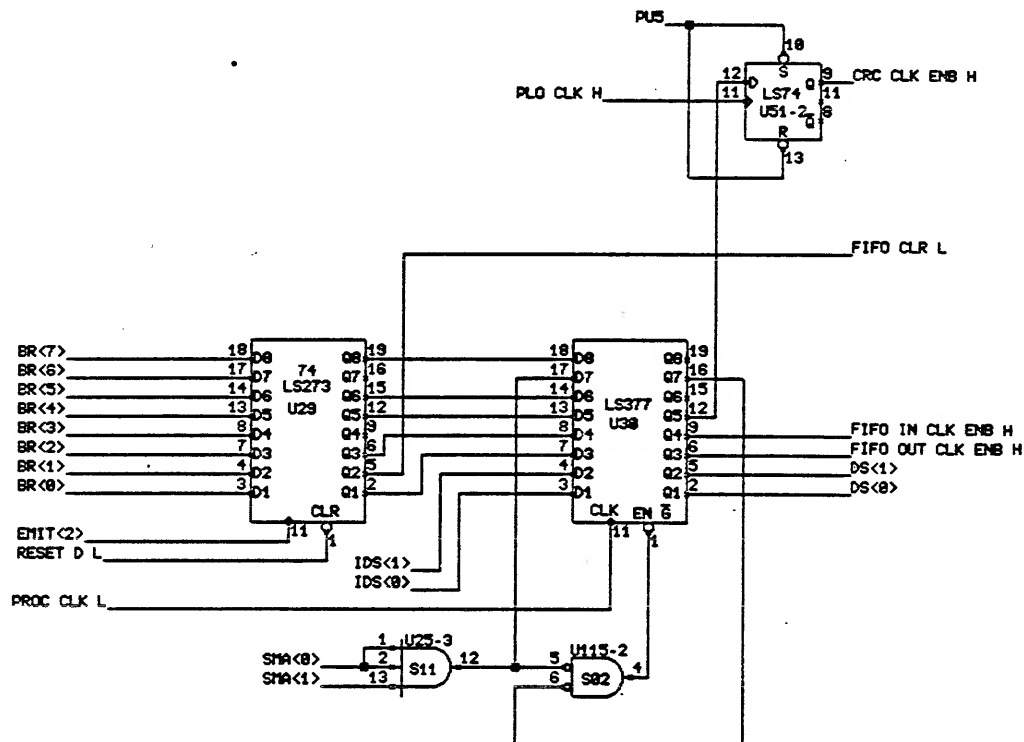
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PROJ : NON ETHERNET I/O BOARD (M10)

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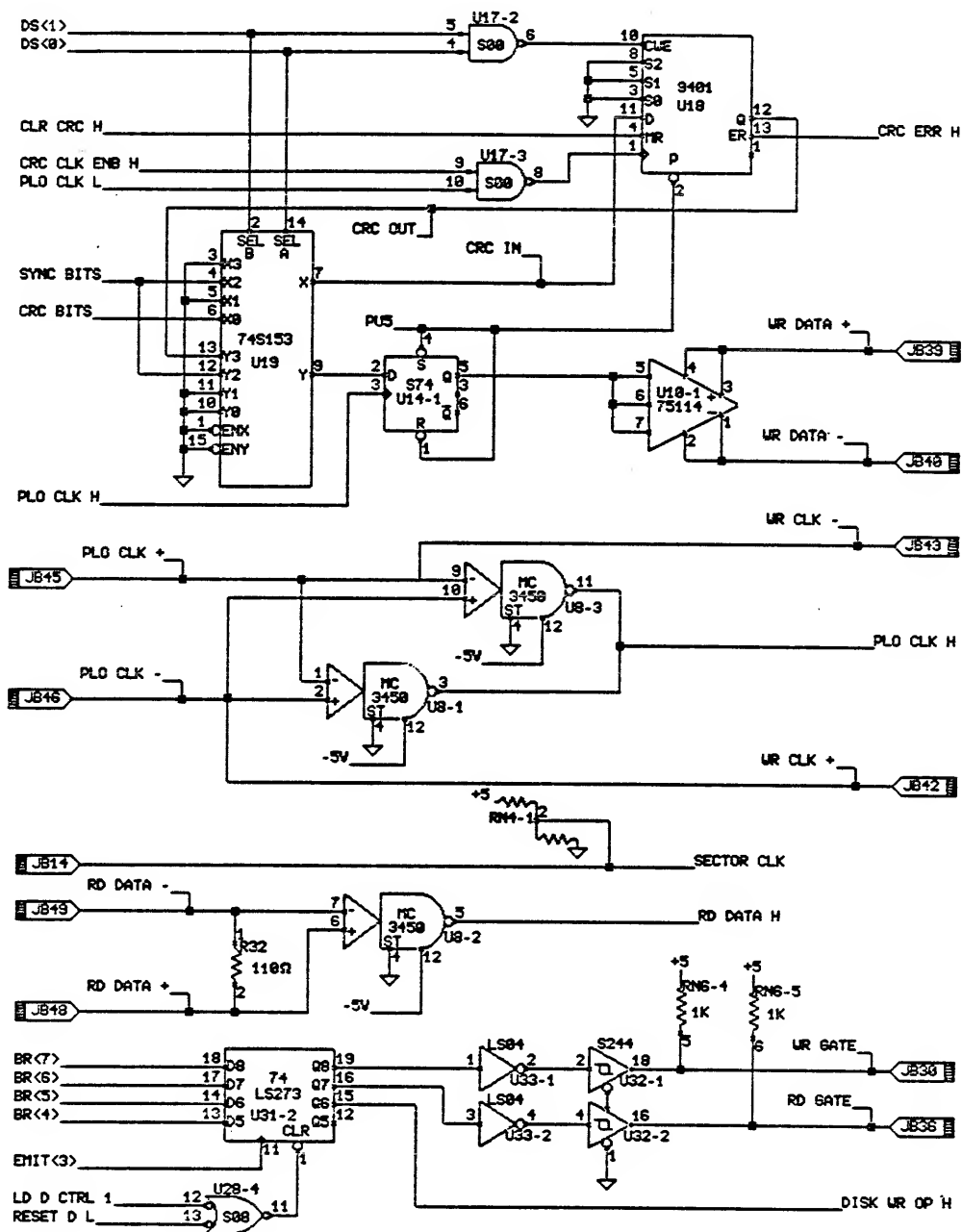
DISK FIFO CONTROL

e48.db

**PERQ**

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UPDATED	FEB-23-84 STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
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PROJ : NON ETHERNET I/O BOARD (NIO)			PAGE 48 OF 44	



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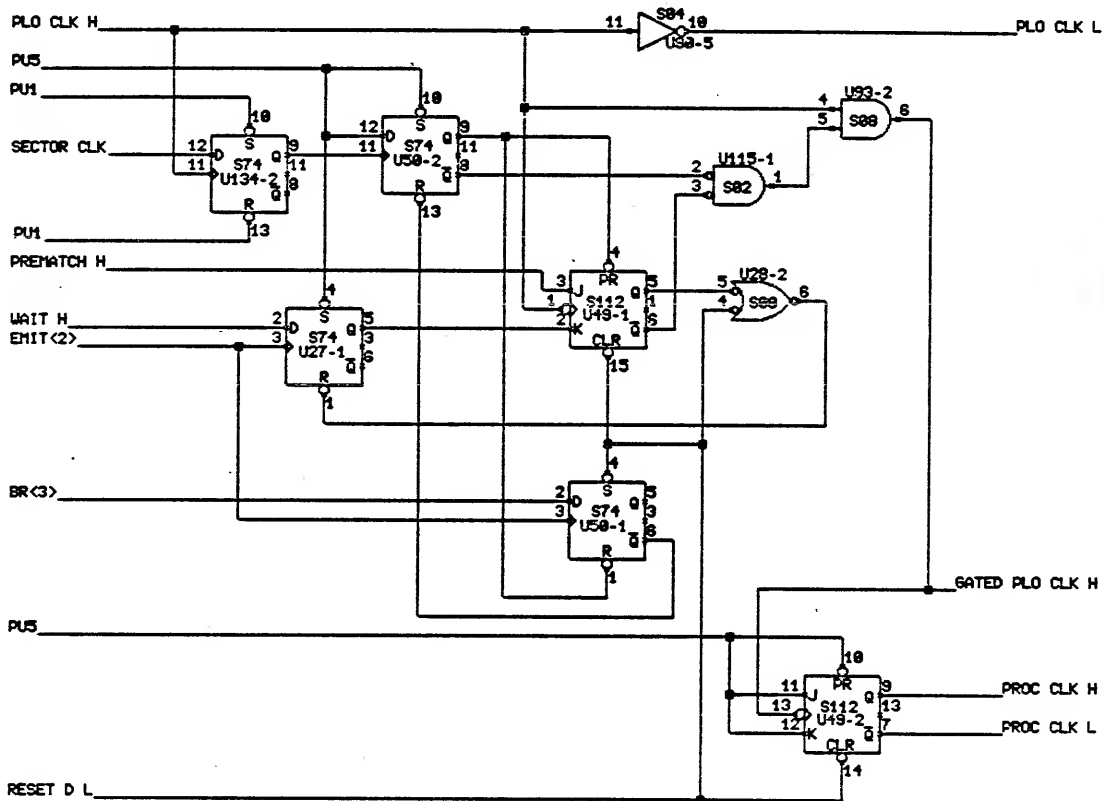
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DISK INVERFACE

e41.db

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UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE	11 OF 44



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TITLE

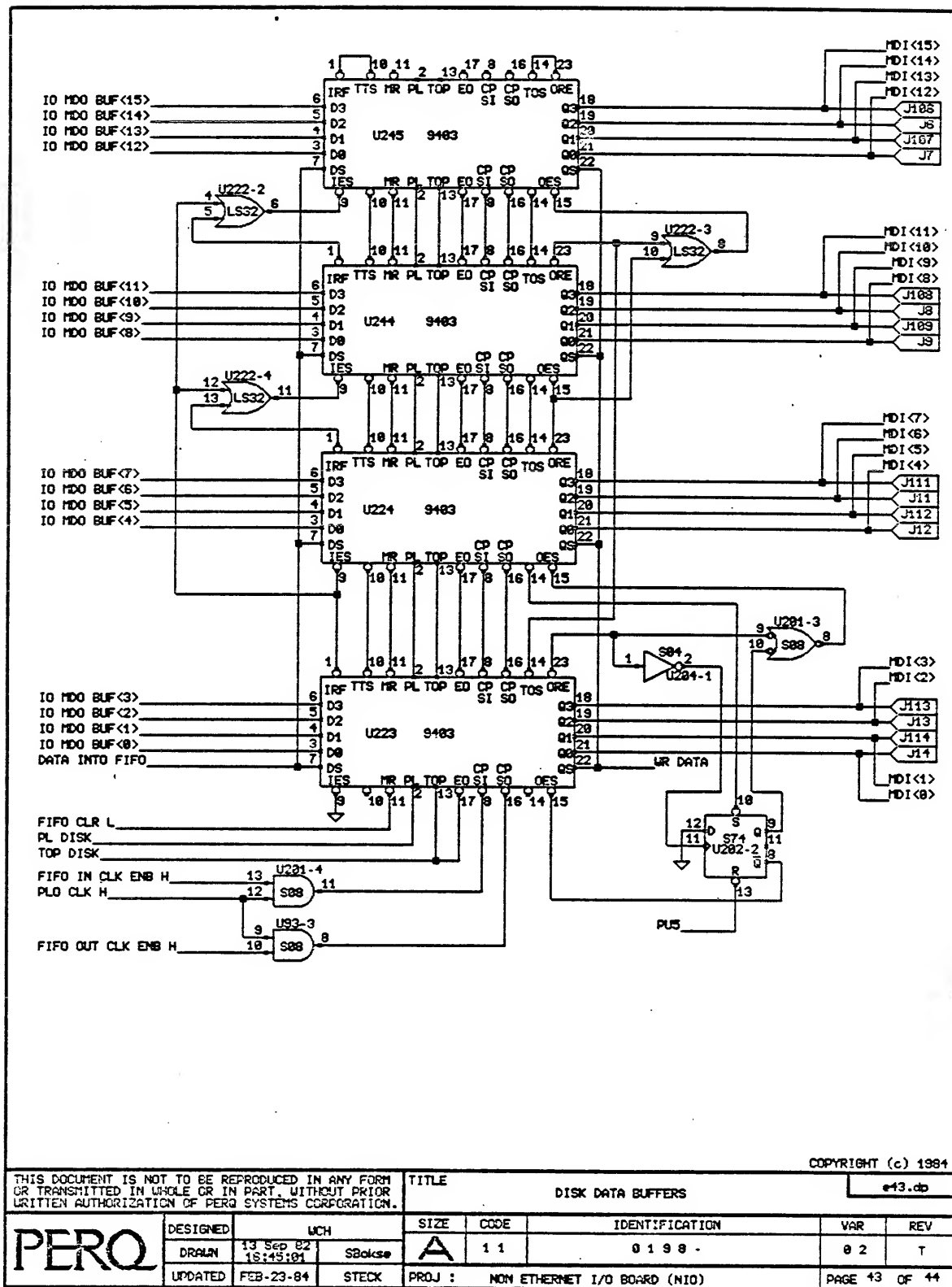
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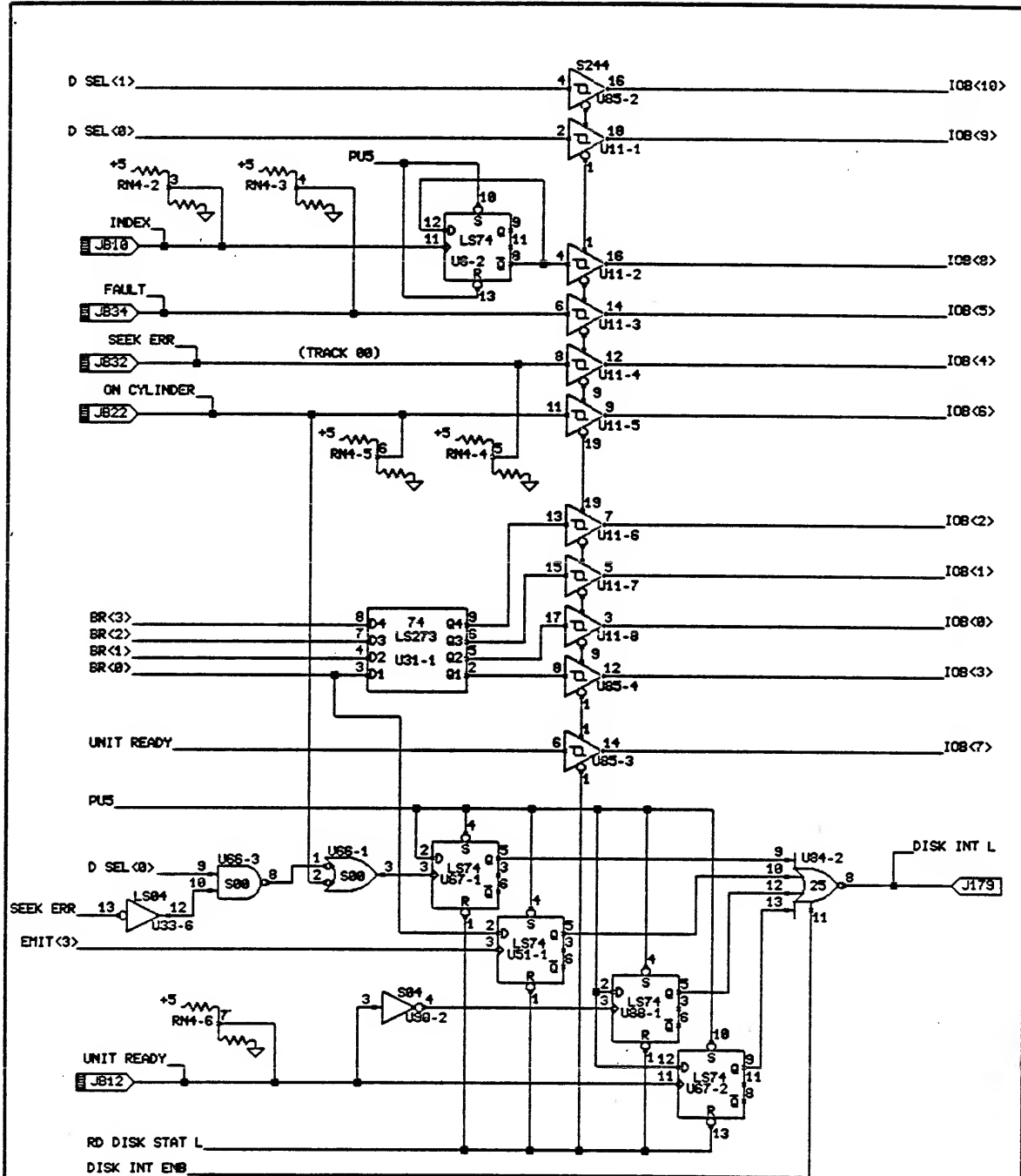
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**PERQ**

DESIGNED	UCH
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UPDATED	FEB-23-84 STECK

SIZE	CODE	IDENTIFICATION	VAR	REV
A	1 1	0 1 9 8 -	0 2	T
PROJ : NON ETHERNET I/O BOARD (NIO)			PAGE 42 OF 44	





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TITLE

DISK STATUS

e11.db

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	UPDATED	FEB-23-84	STECK	PROJ :	NON ETHERNET I/O BOARD (NIO)	PAGE 44	OF 44



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11 Feb 85 16:50:54

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U60...	74S189.....	38			
U62...	MSM5832.....	21			
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U65...	74LS373.....	9			
U66...	74S00.....	44	44	38	37
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UPROC WR H.....	27	7 2
USEC CLK OVFL H.....	35	34
USEC I<2>.....	35	34
WA<1>.....	4	3
WA<2>.....	4	3
WA<3>.....	4	3
WAIT H.....	42	37
WCLK.....	25	18
WCNT L.....	5	4
WHI L.....	6	5
WLO L.....	6	5
WR CLK +.....	41	
WR CLK -.....	41	
WR DATA.....	43	38
WR DATA +.....	41	
WR DATA -.....	41	
WR GATE.....	41	
WR L.....	27	26 18 17 16 15 13 12 7
WREG L.....	5	4
X CONST ENB L.....	30	29
X MUX<0>.....	30	
X MUX<1>.....	30	
X MUX<2>.....	30	
X MUX<3>.....	30	
X SEL<0>.....	29	
X SEL<1>.....	29	
Y MUX<0>.....	30	
Y MUX<1>.....	30	
Y MUX<2>.....	30	

Y MUX<3>.....30  
Y SEL<3>.....30  
Z CLK.....16 15 12  
Z80 INT L.....16 15 13 12  
Z80 WAIT L.....14 12

This Run Was made using the following files:

110198.PART

e44.WL  
e43.WL  
e42.WL  
e41.WL  
e40.WL  
e39.WL  
e38.WL  
e37.WL  
e36.WL  
e35.WL  
e34.WL  
e33.WL  
e32.WL  
e31.WL  
e30.WL  
e29.WL  
e28.WL  
e27.WL  
e26.WL  
e25.WL  
e24.WL  
e23.WL  
e22.WL  
e21.WL  
e20.WL  
e19.WL  
e18.WL  
e17.WL  
e16.WL  
e15.WL  
e14.WL  
e13.WL  
e12.WL  
e11.WL  
e10.WL  
e09.WL  
e08.WL  
e07.WL  
e06.WL  
e05.WL  
e04.WL  
e03.WL  
e02.WL  
e01.WL

Number Of Nets = 924  
Begin Wirelist

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2: U110-1 U181-5 U203-5 U164-15 U163-7
2: U149-3 U149-12 U150-13 U148-11 U218-12
2: U217-12 U215-2 U217-1 U236-13 U216-15
2: U217-2 U220-12 U221-12 U219-12 U146-15
2: U123-4 U146-2 U146-13 U146-3 U123-6
2: U123-5 U65-1 U46-1 U126-24 U126-25
2: C103-2 U158-22 U143-1 U112-19 U143-15
2: U143-4 U158-23 U157-22 U157-23 U22-1
2: U22-3 U16-19 U15-19 U86-6 JA43-1
2: JA41-1 JA39-1 JA37-1 JA35-1 JA33-1
2: JA31-1 JA29-1 JA3-1 JA1-1 JA5-1 JA7-1
2: JA9-1 JA25-1 JA23-1 JA21-1 JA19-1
2: JA17-1 JA15-1 JA13-1 JA11-1 JA27-1
2: JA45-1 JA47-1 JA49-1 U187-15 R7-2
2: C139-2 C159-2 U227-3 U225-15 U225-13
2: R12-2 C121-2 R13-2 U225-1 U225-2
2: U227-4 U227-5 U227-10 U227-11 U227-12
2: U227-7 U227-6 B1-2 C36-1 C35-1 U168-1
2: U242-1 U243-1 U161-1 U108-3 U108-4
2: U175-7 U175-3 U175-4 U175-5 U175-11
2: U175-14 U175-12 U122-22 U233-5 U230-13
2: U230-10 U230-11 U114-15 C19-2 U196-1
2: U1-27 U4-15 U1-29 U1-25 U1-23 U1-13
2: U47-5 JP3-1 U7-7 JP2-1 U7-4 U5-15
2: U26-15 U2-15 U24-15 U58-15 U34-1
2: U39-1 U77-4 U77-5 U60-2 U59-2 U112-1
2: JB33-1 U12-1 U12-19 JB35-1 JB37-1
2: JB38-1 JB1-1 JB3-1 JB5-1 JB7-1 JB9-1
2: JB11-1 JB13-1 JB15-1 JB17-1 JB19-1
2: JB21-1 JB23-1 JB25-1 JB27-1 JB29-1
2: JB31-1 JB41-1 JB44-1 JB47-1 JB50-1
2: C137-2 Q1-1 C136-2 U68-9 U19-5 U19-3
2: U19-11 U19-10 U19-15 U19-1 U32-1
2: U8-4 U18-3 U18-5 U18-8 U223-9 U202-12
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4: U225-4 C135-1                                .%C135-1

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6: C124-1 U187-7 R8-1 C153-1                    .%C153-1

7: U225-10 C153-2                                .%C153-2

8: U62-1 D1-2 D2-2                                .%D2-2

9: C19-1 R29-1                                .%R29-1

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15: U188-9 RN9-8	.%RN9-8
16: U190-12 RN9-9	.%RN9-9
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18: U4-13 U1-37	.%U1-37
19: U10-5 U14-5 U10-6 U10-7	.%U10-7
20: U33-6 U107-1	.%U107-1
21: U127-8 U107-11	.%U107-11
22: U108-11 U108-9	.%U108-9
23: U31-6 U11-15	.%U11-15
24: U6-12 U6-8 U11-4	.%U11-4
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26: U109-12 U110-14	.%U110-14
27: U109-13 U110-17	.%U110-17
28: U109-14 U110-18	.%U110-18
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39: U13-5 U12-2	.%U12-2
40: U13-19 U12-8	.%U12-8
41: U82-3 U123-11	.%U123-11
42: U82-4 U83-4 U123-9	.%U123-9
43: U126-26 U124-5	.%U124-5
44: U128-2 U124-8	.%U124-8
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47: U82-8 U127-7	.%U127-7
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50: U12-11 U13-15	.%U13-15
51: U112-6 U13-16	.%U13-16
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54: U12-15 U13-9	.%U13-9
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63: U19-9 U14-2	.%U14-2
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65: U130-9 U130-10 U144-27	.%U144-27
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68: U172-5 U146-12	.%U146-12
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79: U145-33 U16-16 U15-16	.%U15-16
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81: U145-34 U16-18 U15-18	.%U15-18
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94: U190-3 U158-18	.%U158-18
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98: U143-7 U158-34	.%U158-34
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106: R5-2 U161-16	.%U161-16
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209: U222-13 U224-1 .%U224-1  
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216: U114-7 U23-4	.%U23-4
217: U208-9 U233-4	.%U233-4
218: U221-16 U234-17	.%U234-17
219: U221-17 U234-18	.%U234-18
220: U221-1 U234-19	.%U234-19
221: U162-11 U235-12	.%U235-12
222: U176-6 U235-13	.%U235-13
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243: U147-38 U238-19	.%U238-19
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248: U222-5 U244-1	.%U244-1
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252: U222-6 U245-9	.%U245-9
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254: JB20-1 U25-8	.%U25-8
255: U28-8 U27-11	.%U27-11
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259: U1-1 U3-13	.%U3-13
260: U1-3 U3-14	.%U3-14
261: U1-18 U3-17	.%U3-17
262: U1-20 U3-18	.%U3-18
263: U4-12 U3-7	.%U3-7

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271: U29-6 U30-8	.%U30-8
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279: U31-16 U33-3	.%U33-3
280: U127-9 U33-5	.%U33-5
281: U38-6 U39-11	.%U39-11
282: U40-5 U59-5 U39-12	.%U39-12
283: U38-5 U39-13	.%U39-13
284: U40-4 U59-7 U39-14	.%U39-14
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288: U40-2 U59-11 U39-18	.%U39-18
289: U38-13 U39-2	.%U39-2

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291: U38-11 U39-6	.%U39-6
292: U38-10 U39-8	.%U39-8
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296: U39-7 U60-9 U40-11	.%U40-11
297: U39-5 U60-7 U40-12	.%U40-12
298: U39-3 U60-5 U40-14	.%U40-14
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300: U45-4 U62-12 U46-11	.%U46-11
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304: U65-2 U48-5	.%U48-5
305: U65-5 U48-6	.%U48-6
306: U65-6 U48-7	.%U48-7
307: U65-9 U48-8	.%U48-8
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310: U134-9 U50-11	.%U50-11
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313: U59-13 U60-13 U58-12	.%U58-12
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317: U1-22 U6-2	.%U6-2
318: U45-3 U46-13 U62-11	.%U62-11
319: X2-2 C35-2 U62-17	.%U62-17
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321: U45-9 U80-16 U62-3	.%U62-3
322: U45-5 U80-2 U62-4	.%U62-4
323: U45-6 U80-5 U62-5	.%U62-5
324: U45-7 U80-6 U62-6	.%U62-6
325: U45-8 U80-15 U62-7	.%U62-7
326: U65-12 U64-5	.%U64-5
327: U65-15 U64-6	.%U64-6
328: U65-16 U64-7	.%U64-7
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333: U66-3 U67-3	.%U67-3
334: U5-13 U7-10	.%U7-10
335: U5-14 U7-11	.%U7-11
336: U58-5 U77-2	.%U77-2
337: U58-2 U77-3	.%U77-3
338: U58-11 U77-6	.%U77-6
339: U58-14 U77-7	.%U77-7
340: U45-10 U80-9	.%U80-9
341: U82-1 U44-7 U81-4	.%U81-4

342: U83-2 U82-2	.%U82-2
343: U118-2 U83-11	.%U83-11
344: U174-14 U83-3	.%U83-3
345: U51-5 U84-10	.%U84-10
346: U88-5 U84-12	.%U84-12
347: U67-9 U84-13	.%U84-13
348: U67-5 U84-9	.%U84-9
349: U31-2 U85-8	.%U85-8
350: U46-14 U86-1	.%U86-1
351: U131-5 U86-7	.%U86-7
352: U90-4 U88-3	.%U88-3
353: U90-5 U89-8	.%U89-8
354: U12-6 U9-16	.%U9-16
355: U39-19 U90-1	.%U90-1
356: U134-1 U202-1 U91-6	.%U91-6
357: U62-16 C36-2 X2-1	.%X2-1
358: U207-14 U189-14 U227-14 C159-1	.+12V
359: J94-1 R4-2 R11-1 R10-1 U225-14 C125-1	
359: D1-1 U122-27 U122-26 U122-1	.+5V
360: U207-1 U189-1 R29-2 J99-1 Q1-2 C137-1	
360:	.-12V
361: U225-8 Q1-3 C136-1 U8-12	.-5V
362: U210-12 U211-11	.1 MHZ
363: U151-9	.10 MHZ H
*** Only one pin in net	
364: U151-7	.10 MHZ L
*** Only one pin in net	
365: U225-12 U210-13	.2 MHZ

366: U151-5 U151-13 .20 MHZ

367: U46-2 U46-4 U21-9 U210-14 U175-6  
367: .4 MHZ

368: U151-1 U90-6 U108-2 .40 MHZ

369: U145-19 U86-3 U108-13 .8 MHZ

370: U161-14 U126-27 U143-3 U143-5 U159-19  
370: U157-34 U160-19 U147-6 U145-5 U106-1  
370: U105-1 U104-1 U103-1 U102-1 U101-1  
370: U99-1 U100-1 U122-10 U174-1 U81-1  
370: .A<0>

371: U144-40 U107-6 U106-16 U105-16 U104-16  
371: U103-16 U102-16 U101-16 U99-16 U100-16  
371: U122-21 .A<10>

372: U144-1 U107-9 U106-17 U105-17 U104-17  
372: U103-17 U102-17 U101-17 U99-17 U100-17  
372: U122-23 .A<11>

373: U144-2 U107-12 U106-18 U105-18 U104-18  
373: U103-18 U102-18 U101-18 U99-18 U100-18  
373: U122-2 .A<12>

374: U144-3 U107-15 U106-19 U105-19 U104-19  
374: U103-19 U102-19 U101-19 U99-19 U100-19  
374: U125-7 .A<13>

375: U144-4 U107-16 U125-8 .A<14>

376: U144-5 U107-19 U125-9 .A<15>

377: U161-12 U172-10 U159-20 U157-33 U160-20  
377: U147-7 U106-2 U105-2 U104-2 U103-2  
377: U102-2 U101-2 U99-2 U100-2 U122-9  
377: U174-2 U81-2 .A<1>

378: U32-12 U147-8 U106-3 U105-3 U104-3  
378: U103-3 U102-3 U101-3 U99-3 U100-3  
378: U122-8 U174-3 U81-3 U133-2 .A<2>

379: U32-14 U106-4 U105-4 U104-4 U103-4  
379: U102-4 U101-4 U99-4 U100-4 U122-7  
379: U81-5 U83-1 U133-3 .A<3>

380: U144-34 U127-37 U106-5 U105-5 U104-5  
380: U103-5 U102-5 U101-5 U99-5 U100-5  
380: U122-6 U44-1 .A<4>

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381: U144-35 U127-38 U106-6 U105-6 U104-6
381: U103-6 U102-6 U101-6 U99-6 U100-6
381: U122-5 U44-2 .A<5>

382: U144-36 U127-39 U106-7 U105-7 U104-7
382: U103-7 U102-7 U101-7 U99-7 U100-7
382: U122-4 U44-3 .A<6>

383: U144-37 U127-40 U106-13 U105-13 U104-13
383: U103-13 U102-13 U101-13 U99-13 U100-13
383: U122-3 U44-5 .A<7>

384: U144-38 U107-2 U106-14 U105-14 U104-14
384: U103-14 U102-14 U101-14 U99-14 U100-14
384: U122-25 .A<8>

385: U144-39 U107-5 U106-15 U105-15 U104-15
385: U103-15 U102-15 U101-15 U99-15 U100-15
385: U122-24 .A<9>

386: U173-12 .AD15
*** Only one pin in net
*** Run Has no outputs

387: U1-34 U2-6 .ADDR DATA<0>

388: U1-36 U2-7 .ADDR DATA<1>

389: U1-38 U2-8 .ADDR DATA<2>

390: U1-40 U2-9 .ADDR DATA<3>

391: U1-2 U2-11 .ADDR DATA<4>

392: U1-4 U2-12 .ADDR DATA<5>

393: U1-17 U2-13 .ADDR DATA<6>

394: U1-19 U2-14 .ADDR DATA<7>

395: U1-21 U24-6 .ADDR DATA<8>

396: U163-6 U218-3 U217-3 U220-3 U221-3
396: U240-17 U219-3 .ADDR<0>

397: U149-6 U164-4 U148-2 U218-6 U217-6
397: U220-6 U221-6 U219-6 U240-11 .ADDR<1>

398: U149-4 U164-7 U148-3 U218-4 U217-4
398: U220-4 U221-4 U219-4 U240-13 .ADDR<2>

399: U149-5 U164-9 U148-4 U218-5 U217-5

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399: U220-5 U221-5 U219-5 U240-15	.ADDR<3>
400: U12-16 JB2-1 RN3-3	.B<0>
401: U12-18 JB4-1 RN3-4	.B<1>
402: U12-3 JB6-1 RN3-5	.B<2>
403: U12-5 JB8-1 RN3-6	.B<3>
404: U12-9 JB24-1 RN3-8	.BA<0>
405: U12-7 JB28-1 RN3-7	.BA<1>
406: U211-17	.BC INSTR ENB
*** Only one pin in net	
407: U211-16	.BC INSTR<0>
*** Only one pin in net	
408: U211-15	.BC INSTR<1>
*** Only one pin in net	
409: U211-14	.BC INSTR<2>
*** Only one pin in net	
410: U26-6 U34-3 U29-3 U51-2 U31-3	.BR<0>
411: U26-7 U34-4 U29-4 U31-4	.BR<1>
412: U26-8 U34-7 U29-7 U31-7	.BR<2>
413: U26-9 U34-8 U29-8 U50-2 U31-8	.BR<3>
414: U26-11 U34-13 U29-13 U31-13	.BR<4>
415: U26-12 U34-14 U29-14 U31-14	.BR<5>
416: U26-13 U34-17 U29-17 U31-17	.BR<6>
417: U26-14 U34-18 U29-18 U31-18	.BR<7>
418: U167-5 U185-5 U170-5 U168-2	.BUF D<0>
419: U167-6 U185-6 U170-6 U168-5	.BUF D<1>
420: U167-7 U185-7 U170-7 U168-6	.BUF D<2>
421: U167-8 U185-8 U170-8 U168-9	.BUF D<3>
422: U152-5 U186-5 U171-5 U168-12	.BUF D<4>

423: U152-6 U186-6 U171-6 U168-15 .BUF D<5>  
424: U152-7 U186-7 U171-7 U168-16 .BUF D<6>  
425: U152-8 U186-8 U171-8 U168-19 .BUF D<7>  
426: U144-23 U82-9 U172-9 U125-11 .BUS ACK L  
427: U162-13 U146-9 .BUS CTRL  
428: U12-14 JB26-1 RN3-2 .BUS ENB  
429: RN8-5 U144-25 U82-6 .BUS RQST L  
430: U57-17 .BUSY  
\*\*\* Only one pin in net  
\*\*\* Run Has no outputs  
431: U176-10 U191-6 U17-1 .C/P ENB H  
432: U91-4 U91-5 .CAR SENSE L  
\*\*\* Run Has no outputs  
433: U133-11 U142-9 U139-9 U142-16 U139-16  
433: .CLK IN H  
434: U133-12 U140-16 U140-9 U141-9 U141-16  
434: .CLK IN L  
435: U133-9 U186-19 U185-1 .CLK OUT H  
436: U133-10 U171-19 U170-1 .CLK OUT L  
437: U176-9 U65-11 U140-1 U141-19 U139-1  
437: U142-19 U204-13 U204-11 U228-4 U132-9  
437: .CLK-4F  
438: U161-2 U228-3 J176-1 .CLK-7R  
439: U243-11 U242-11 U204-10 U209-5 U193-10  
439: U23-13 .CLKOR  
440: U199-9 U195-9 U200-5 U110-11 U149-14  
440: U149-13 U148-1 U218-13 U217-13 U218-14  
440: U217-14 U220-14 U221-14 U219-14 U219-13  
440: U220-13 U221-13 U204-12 .CLKORB  
441: U34-6 U18-4 .CLR CRC H  
442: U236-12 U228-11 U162-9 U176-4 .CO<1>  
443: U162-10 U176-5 U214-12 .CO<2>

444: U132-6 J39-1 .COM NET INT L  
445: U14-9 U19-6 .CRC BITS  
446: U51-9 U17-9 .CRC CLK ENB H  
447: U7-1 U18-13 .CRC ERR H  
448: U19-7 U18-11 .CRC IN  
449: U19-13 U18-12 .CRC OUT  
450: U197-4 U199-10 U200-6 .D GRANT H  
451: U127-3 RN1-9 U125-6 .D MEM RD L  
452: RN1-10 U127-4 U125-5 .D MEM WR L  
453: JP2-2 RN6-8 U7-15 U11-2 U66-9 .D SEL<0>  
454: U7-14 RN6-7 JP3-2 U85-4 .D SEL<1>  
455: U48-14 U139-14 U140-14 RN10-2 U144-14  
455: U126-11 U107-3 U127-30 U159-8 U158-40  
455: U160-8 U157-40 U147-10 U145-6 U80-3  
455: U46-3 U168-3 U106-12 U106-8 U122-11  
455: U174-13 .D<0>  
456: U48-13 U139-13 U140-13 RN10-3 U144-15  
456: U126-10 U107-4 U127-29 U159-7 U158-1  
456: U160-7 U157-1 U147-11 U145-7 U80-4  
456: U46-5 U168-4 U105-12 U105-8 U122-12  
456: .D<1>  
457: U48-12 U139-12 U140-12 RN10-4 U144-12  
457: U126-9 U107-7 U127-28 U159-6 U158-39  
457: U160-6 U157-39 U147-12 U145-8 U80-7  
457: U46-7 U168-7 U104-12 U104-8 U122-13  
457: .D<2>  
458: U48-11 U139-11 U140-11 RN10-5 U144-8  
458: U126-8 U107-8 U127-27 U159-5 U158-2  
458: U160-5 U157-2 U147-13 U145-9 U80-14  
458: U46-9 U168-8 U103-12 U103-8 U122-15  
458: .D<3>  
459: U64-14 U142-14 U141-14 RN10-6 U144-7  
459: U126-7 U107-13 U127-26 U159-4 U158-38  
459: U160-4 U157-38 U147-14 U145-10 U80-17  
459: U168-13 U102-12 U102-8 U122-16 .D<4>

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460: U64-13 U142-13 U141-13 RN10-7 U144-9
460: U126-6 U107-14 U127-23 U159-3 U158-3
460: U160-3 U157-3 U147-15 U145-11 U80-8
460: U168-14 U101-12 U101-8 U122-17      .D<5>

461: U64-12 U85-7 U142-12 U141-12 RN10-8
461: U144-10 U126-5 U107-17 U127-22 U159-2
461: U158-37 U160-2 U157-37 U147-16 U145-12
461: U80-13 U168-17 U100-12 U100-8 U122-18
461:                                     .D<6>

462: U64-11 U85-9 U142-11 U141-11 RN10-9
462: U144-13 U126-4 U107-18 U127-21 U159-1
462: U158-4 U160-1 U157-4 U147-17 U145-13
462: U168-18 U99-12 U99-8 U122-19      .D<7>

463: U161-6 U144-30 U127-32      .DA<0>

464: U161-8 U144-31 U127-33      .DA<1>

465: U32-8 U144-32 U127-34      .DA<2>

466: U32-6 U144-33 U127-35      .DA<3>

467: U14-12 U223-7 U245-7 U244-7 U224-7
467:                                     .DATA INTO FIFO
*** Run Has no outputs

468: U15-14 RN6-2 JA34-1      .DIR L

469: U1-14 U7-6      .DISK CC L

470: U9-12 U84-11      .DISK INT ENB

471: J179-1 U84-8      .DISK INT L

472: U195-6 U68-17      .DISK RQST H

473: U213-14 U68-15      .DISK WR H

474: U68-4 U31-15      .DISK WR OP H

475: U128-12 U131-3 U127-15      .DMA ACK L

476: U83-13 U133-15 U162-12 U123-2      .DMA FIFO L

477: U146-6 U186-2      .DMA IR

478: U146-5 U142-17      .DMA OR

479: U146-7 U127-16      .DMA RQST L

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480: U158-36 U125-16          .DP IO RQST L
481: JB18-1 U12-12 RN6-9      .DRIVE SEL<0>
482: U112-14 JB16-1 RN6-10    .DRIVE SEL<1>
483: U30-2 U17-4 U19-14      .DS<0>
484: U30-5 U17-5 U19-2       .DS<1>
485: U66-6 U47-4             .EMIT NOW
486: U47-14 U34-11           .EMIT<1>
487: U47-13 U29-11 U50-3 U27-3 .EMIT<2>
488: U47-12 U31-11 U51-3     .EMIT<3>
489: U47-9 U68-1 U68-19      .EMIT<6>
490: U132-1 U111-9           .ENB BIT CNT H
491: U114-9                   .ENB IN FIFO<0> L
*** Only one pin in net
492: U114-10                   .ENB IN FIFO<1> L
*** Only one pin in net
493: U110-19 U216-14 U115-8 U166-1 U191-4
493: U191-2                   .ENB MA H
494: U114-11                   .ENB NET FIFO L
*** Only one pin in net
495: U194-5 U132-3           .ENB NET INT H
496: U203-6 U110-15          .ENB PL
497: U110-16 U181-6          .ENB TOP
498: U111-6 U211-1           .ENB USEC CLK H
499: U111-5 U132-4           .ENB USEC INT H
500: U128-13 U146-14 U126-18 U125-13 .END DMA INT
501: U128-11 U162-2 U126-23 U127-36 RN1-2
501: U128-5                   .EOP L
502: J103-1 U195-13          .EXT A RQST H
503: U213-1 J154-1           .EXT A WR H

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504: U193-13 U129-14	.EXT ADDR L
505: J173-1 U195-4 R1-2	.EXT B RQST H
506: U213-2 J174-1	.EXT B WR H
507: U4-5 U9-2	.F<0>
508: U4-11 U9-5	.F<1>
509: U4-14 U9-6	.F<2>
510: U58-3 U34-9	.FA<0>
511: U58-6 U34-12	.FA<1>
512: U58-10 U34-15	.FA<2>
513: U58-13 U34-16	.FA<3>
514: JB34-1 U11-6 RN4-4	.FAULT
515: U29-5 U223-11 U224-11 U244-11 U245-11	
515:	.FIFO CLR L
516: U30-9 U201-13	.FIFO IN CLK ENB H
517: U30-6 U93-10	.FIFO OUT CLK ENB H
518: U127-25 U128-6 U145-15	.FLOP ACK L
519: U15-11 RN5-6 JA20-1	.FLOP INDEX L
520: U126-21 U145-18	.FLOP INT
521: JA46-1 U46-6 RN5-8	.FLOP RD DATA L
522: U15-13 RN5-7 JA22-1	.FLOP RDY L
523: U127-19 U33-10	.FLOP RQST L
524: U16-13 U131-12 U15-1	.FLOP RW
525: U145-23 U131-6	.FLOP SEP DATA
526: U16-7 U16-1	.FLOP SK
527: U15-4 RN5-4 JA42-1	.FLOP TK<0> L
528: U15-2 RN5-3 JA10-1	.FLOP TWO SIDED L

529: U145-22 U86-2	.FLOP WINDOW
530: U16-3 JA38-1	.FLOP WR DATA L
531: U16-5 JA40-1	.FLOP WR ENB L
532: U16-2 RN5-2 JA44-1	.FLOP WR PRO L
533: U172-4 U172-3 U170-18 U171-18 U186-18	
533: U185-18 U140-18 U141-18 U142-18 U139-18	
533:	.FLUSH L
534: U173-11	.FP CLK L
*** Only one pin in net	
*** Run Has no outputs	
535: U57-15	.FP INT
*** Only one pin in net	
*** Run Has no outputs	
536: U33-9 U57-11	.FR
*** Run Has no outputs	
537: U33-8	.FR L
*** Only one pin in net	
538: U57-13	.FS
*** Only one pin in net	
*** Run Has no outputs	
539: U201-5 U211-19	.GATED 1MHZ
540: U132-13	.GATED PACKET CLK L
*** Only one pin in net	
*** Run Has no outputs	
541: U66-5 U93-6 U49-13	.GATED PLO CLK H
542: U88-9	.GO H
*** Only one pin in net	
543: U127-24 U147-2	.GPB ACK L
544: J42-1 U237-9	.GPB ATN
545: J144-1 U237-7	.GPB DAV
546: J48-1 U238-2	.GPB DI<1>
547: J147-1 U238-3	.GPB DI<2>
548: J47-1 U238-4	.GPB DI<3>

549: J146-1 U238-5	.GPB DI<4>
550: J38-1 U238-6	.GPB DI<5>
551: J138-1 U238-7	.GPB DI<6>
552: J139-1 U238-8	.GPB DI<7>
553: J41-1 U238-9	.GPB DI<8>
554: J46-1 U237-8	.GPB EOI
555: J43-1 U237-4	.GPB IFC
556: U131-9 RN1-4 U147-9	.GPB INT L
557: J143-1 U237-5	.GPB NDAC
558: J44-1 U237-6	.GPB NRFD
559: U238-11 U174-9	.GPB PE
560: U147-5 U125-15	.GPB RD
561: J141-1 U237-3	.GPB REN
562: U127-18 U147-1	.GPB RQST L
563: U237-1 U174-7	.GPB SC
564: J142-1 U237-10	.GPB SRQ
565: U199-11 J171-1 U109-18	.GRANT DMA
566: U150-12 U216-13	.HDCAR
567: U15-5 JA18-1	.HEAD LD L
568: J148-1 U216-1	.HOLD OFF L
569: U128-9 U166-10 U166-5 U166-12 U114-1	
569: U23-5 U17-2 U161-18	.ICLK-4R
570: U34-2 U30-3	.IDS<0>
571: U34-5 U30-4	.IDS<1>
572: JB10-1 RN4-3 U6-11	.INDEX
573: U129-1 U111-1 J72-1 U194-1 U28-2	
573: U13-1 U9-1	.INIT L



574: U126-13 U157-7	.INT ENB
575: U140-5 U242-2 U223-3	.IO MDO BUF<0>
576: U139-7 U243-6 U244-5	.IO MDO BUF<10>
577: U139-8 U243-9 U244-6	.IO MDO BUF<11>
578: U142-5 U243-12 U245-3	.IO MDO BUF<12>
579: U142-6 U243-15 U245-4	.IO MDO BUF<13>
580: U142-7 U243-16 U245-5	.IO MDO BUF<14>
581: U142-8 U243-19 U245-6	.IO MDO BUF<15>
582: U140-6 U242-5 U223-4	.IO MDO BUF<1>
583: U140-7 U242-6 U223-5	.IO MDO BUF<2>
584: U140-8 U242-9 U223-6	.IO MDO BUF<3>
585: U141-5 U242-12 U224-3	.IO MDO BUF<4>
586: U141-6 U242-15 U224-4	.IO MDO BUF<5>
587: U141-7 U242-16 U224-5	.IO MDO BUF<6>
588: U141-8 U242-19 U224-6	.IO MDO BUF<7>
589: U139-5 U243-2 U244-3	.IO MDO BUF<8>
590: U139-6 U243-5 U244-4	.IO MDO BUF<9>
591: R1-1 U197-11 J178-1 U213-15 R2-1	
591: U213-4 U213-7 U195-1 U197-8 U197-10	
591: U109-17	.IO MEM RQST
592: U213-5 J153-1 U109-16	.IO MEM WR
593: U179-15 U115-10	.IO SEL H
594: U150-14 U164-1 U148-8 U236-14 U166-3	
594: U234-14 U235-14 U214-14	.IO SEL L
595: U216-10 U209-1 U233-1 J69-1 U230-2	
595: U196-12 U211-7	.IOA<0>
596: U163-12 U216-11 U209-2 U233-2 J169-1	
596: U230-3 U196-13 U211-8	.IOA<1>

597: U209-3 U233-3 J68-1 U230-4 .IOA<2>  
598: U208-1 J168-1 U230-5 .IOA<3>  
599: U208-2 J67-1 U230-6 .IOA<4>  
600: U208-4 J167-1 U230-7 .IOA<5>  
601: U208-6 J66-1 U230-8 .IOA<6>  
602: U232-1 U231-1 U208-3 J166-1 U230-9  
602: U211-9 .IOA<7>  
603: U232-19 U231-19 U230-19 .IOB BUF ENB L  
604: U208-5 J71-1 U230-1 .IOB ENB L  
605: U57-9 U165-4 U235-9 U167-14 U65-3  
605: U231-2 U129-4 U194-2 U111-3 U196-4  
605: U77-15 U60-4 U13-3 U9-3 U11-3 .IOB<0>  
606: U214-8 U232-4 U85-16 .IOB<10>  
607: U214-9 U232-5 .IOB<11>  
608: U235-5 U232-6 .IOB<12>  
609: U235-6 U232-7 .IOB<13>  
610: U235-7 U232-8 .IOB<14>  
611: U57-3 U235-8 U161-3 U232-9 .IOB<15>  
612: U57-5 U165-5 U234-5 U167-13 U65-4  
612: U231-3 U129-5 U111-4 U196-5 U77-1  
612: U60-6 U13-4 U9-4 U11-5 .IOB<1>  
613: U165-12 U236-5 U234-6 U167-12 U65-7  
613: U231-4 U129-12 U111-7 U196-6 U77-10  
613: U60-10 U13-7 U9-7 U11-7 .IOB<2>  
614: U165-13 U236-6 U234-7 U167-11 U65-8  
614: U231-5 U129-13 U111-8 U196-7 U77-9  
614: U60-12 U13-8 U9-8 U85-12 .IOB<3>  
615: U150-5 U148-6 U236-7 U152-14 U65-13  
615: U231-6 U111-13 U196-16 U59-4 U13-13  
615: U9-13 U11-12 .IOB<4>  
616: U150-6 U25-3 U236-8 U152-13 U65-14  
616: U231-7 U111-14 U196-17 U59-6 U13-14  
616: U9-14 U11-14 .IOB<5>

617: U150-7 U25-5 U236-9 U152-12 U65-17  
617: U231-8 U111-17 U196-18 U59-10 U13-17  
617: U9-17 U11-9 .IOB<6>

618: U57-7 U150-8 U25-4 U214-5 U161-5  
618: U152-11 U65-18 U231-9 U111-18 U196-19  
618: U59-12 U13-18 U9-18 U85-14 .IOB<7>

619: U214-6 U232-2 U88-12 U11-16 .IOB<8>

620: U214-7 U232-3 U11-18 .IOB<9>

621: U152-2 U85-11 .IOD OUT FIFO

622: U161-17 U162-5 U174-4 .IOD OUT RDY

623: U231-18 J64-1 .IOD<0>

624: U232-16 J58-1 .IOD<10>

625: U232-15 J158-1 .IOD<11>

626: U232-14 J57-1 .IOD<12>

627: U232-13 J157-1 .IOD<13>

628: U232-12 J56-1 .IOD<14>

629: U232-11 J156-1 .IOD<15>

630: U231-17 J164-1 .IOD<1>

631: U231-16 J63-1 .IOD<2>

632: U231-15 J163-1 .IOD<3>

633: U231-14 J62-1 .IOD<4>

634: U231-13 J162-1 .IOD<5>

635: U231-12 J61-1 .IOD<6>

636: U231-11 J161-1 .IOD<7>

637: U232-18 J59-1 .IOD<8>

638: U232-17 J159-1 .IOD<9>

639: U32-11 .J ADDR<0>

\*\*\* Only one pin in net  
\*\*\* Run Has no outputs

640: U32-13	.J ADDR<1>
*** Only one pin in net	
*** Run Has no outputs	
641: U32-15	.J ADDR<2>
*** Only one pin in net	
*** Run Has no outputs	
642: U32-17 U57-2	.J ADDR<3>
*** Run Has no outputs	
643: U1-12 U24-11	.JMP<0>
644: U1-11 U24-9	.JMP<1>
645: U1-9 U24-8	.JMP<2>
646: U1-8 U24-7	.JMP<3>
647: J197-1 RN1-6 U157-29	.KBD DATA H
648: U118-8 U168-11	.LATCH BUF D
649: U230-17 U176-13 U211-4	.LD BIT CNT L
650: U230-22 U9-11 U28-12	.LD D CTRL 1
651: U230-23 U13-11 U25-11 U25-10 U25-9	
651:	.LD D CTRL 2
652: U230-20 U77-11	.LD DF CNTR L
653: U230-21 U77-14 U58-1 U23-12	.LD DF DATA L
654: U216-12 U115-9 U166-2 U230-16	.LD DMA ADDR L
655: U165-9 U209-15	.LD DMA CHAN L
656: U209-14	.LD FP INST L
*** Only one pin in net	
657: U129-9 U209-10	.LD INT ENB L
658: U209-13 U111-11 U88-11	.LD NET CTRL L
659: U209-12 U194-3	.LD NET ENB L
660: U208-14	.LD NET FILE L
*** Only one pin in net	
661: U64-19 U48-1 U209-11	.LD UPROC DATA L

662: U230-18 U193-9 U211-6	.LD USEC CLK L
663: U5-8 U66-12	.LDSR
664: U16-12 RN6-4 JA2-1	.LOW CUR L
665: U130-8 U124-2 U158-8 U157-8 U44-6	
665:	.M1 L
666: U191-3 J54-1	.MA EXT A
667: U176-8 U239-19 U239-1 U241-19 U241-1	
667: U240-1	.MA OUT L
668: J31-1 U240-16 U240-5	.MADDR<10>
669: J131-1 U240-18 U240-3	.MADDR<11>
670: J29-1 U241-12	.MADDR<12>
671: J129-1 U241-14	.MADDR<13>
672: J28-1 U241-16	.MADDR<14>
673: J128-1 U241-18	.MADDR<15>
674: J27-1 U241-3	.MADDR<16>
675: J127-1 U241-5	.MADDR<17>
676: J26-1 U241-7	.MADDR<18>
677: J126-1 U241-9	.MADDR<19>
678: U239-5 J36-1	.MADDR<2>
679: U239-3 J136-1	.MADDR<3>
680: U239-18 J34-1	.MADDR<4>
681: U239-16 J134-1	.MADDR<5>
682: U239-14 J33-1	.MADDR<6>
683: U239-12 J133-1	.MADDR<7>
684: J32-1 U240-12 U240-9	.MADDR<8>
685: J132-1 U240-14 U240-7	.MADDR<9>
686: U7-3 U27-12 U90-2	.MATCH H

687: U170-14 J14-1 U223-21	.MDI<0>
688: U185-12 J8-1 U244-19	.MDI<10>
689: U185-11 J108-1 U244-18	.MDI<11>
690: U186-14 J7-1 U245-21	.MDI<12>
691: U186-13 J107-1 U245-20	.MDI<13>
692: U186-12 J6-1 U245-19	.MDI<14>
693: U186-11 J106-1 U245-18	.MDI<15>
694: U170-13 J114-1 U223-20	.MDI<1>
695: U170-12 J13-1 U223-19	.MDI<2>
696: U170-11 J113-1 U223-18	.MDI<3>
697: U171-14 J12-1 U224-21	.MDI<4>
698: U171-13 J112-1 U224-20	.MDI<5>
699: U171-12 J11-1 U224-19	.MDI<6>
700: U171-11 J111-1 U224-18	.MDI<7>
701: U185-14 J9-1 U244-21	.MDI<8>
702: U185-13 J109-1 U244-20	.MDI<9>
703: U242-3 J24-1	.MDO<0>
704: U243-7 J18-1	.MDO<10>
705: U243-8 J118-1	.MDO<11>
706: U243-13 J17-1	.MDO<12>
707: U243-14 J117-1	.MDO<13>
708: U243-17 J16-1	.MDO<14>
709: U243-18 J116-1	.MDO<15>
710: U242-4 J124-1	.MDO<1>
711: U242-7 J23-1	.MDO<2>
712: U242-8 J123-1	.MDO<3>

713: U242-13 J22-1	.MDO<4>
714: U242-14 J122-1	.MDO<5>
715: U242-17 J21-1	.MDO<6>
716: U242-18 J121-1	.MDO<7>
717: U243-3 J19-1	.MDO<8>
718: U243-4 J119-1	.MDO<9>
719: U145-26 U131-1 U175-10	.MFM
720: U132-2	.NET INT H
*** Only one pin in net	
*** Run Has no outputs	
721: U88-13	.NET INT L
*** Only one pin in net	
*** Run Has no outputs	
722: R2-2 U191-12 U199-14	.NET RQST H
723: U199-13	.NET WR H
*** Only one pin in net	
*** Run Has no outputs	
724: U123-14 U133-14	.ODD
725: JB22-1 U11-11 RN4-6 U66-2	.ON CYLINDER
726: RN8-6 U144-20 U157-36 U125-4 U44-4	
726:	.P IO RQST L
727: RN8-7 U144-19 U124-4 U125-3	.P MEM RQST L
728: U28-1 U9-9	.P RESET L
729: U130-5 RN8-9 U130-4 U144-22 U127-2	
729:	.P WR L
730: U218-16 U214-19	.PALR7
731: U128-3 U64-17 U126-19	.PERQ INT
732: U148-9 U150-15	.PHDCAR
733: U128-10 U223-2 U224-2 U244-2 U245-2	
733:	.PL DISK

734: U204-6 J104-1 .PL EXT A  
735: U228-6 J74-1 .PL EXT B  
736: U204-4 .PL NET  
\*\*\* Only one pin in net  
737: U204-8 U142-1 U139-19 U141-1 U140-19  
737: .PL UPROC  
738: U8-9 JB45-1 U8-1 .PLO CLK +  
739: JB46-1 U8-2 .PLO CLK -  
740: U14-11 U51-11 U8-11 U8-3 U14-3 U93-4  
740: U49-1 U90-11 U134-11 U93-9 U201-12  
740: .PLO CLK H  
741: U40-6 U28-10 U38-8 U17-10 U90-10  
741: .PLO CLK L  
742: U27-9 U49-3 .PREMATCH H  
743: U66-4 U66-13 U49-9 .PROC CLK H  
744: U6-3 U3-11 U1-31 U30-11 U49-7 .PROC CLK L  
745: U122-20 U125-17 .PROM CS L  
746: U173-10 U173-13 U167-19 U152-19 U124-12  
746: U124-10 U48-19 U64-1 RN2-2 U124-1  
746: U158-6 U159-14 U159-11 U159-16 U81-6  
746: U233-6 U209-6 U134-13 U134-10 .PU1  
747: U118-4 U194-10 U194-12 RN2-4 U123-3  
747: U123-7 U123-10 U118-10 U118-13 U118-1  
747: U170-19 U171-1 U186-1 U185-19 U143-6  
747: U207-12 U207-5 U207-10 .PU3  
748: U213-3 U199-1 RN2-5 U178-1 U180-1  
748: U165-1 U150-9 U150-4 U215-1 .PU4  
749: U6-4 RN2-6 U1-32 U1-15 U47-6 U7-2  
749: U27-13 U27-10 U14-13 U14-10 U28-9  
749: U38-9 U40-9 U51-10 U51-13 U14-1 U14-4  
749: U18-2 U50-12 U27-4 U50-10 U49-10  
749: U49-12 U49-11 U202-13 U67-12 U88-2  
749: U67-2 U6-13 U6-10 U51-4 U67-10 U67-4  
749: U88-4 .PU5  
750: U134-2 RN2-7 U134-4 U202-4 U202-2  
750: U196-15 .PU6



751: U194-4 U88-10	.PU7
*** Run Has no outputs	
752: U214-3 U240-4 U219-10	.R<10>
753: U214-4 U240-2 U219-11	.R<11>
754: U235-11 U220-7 U241-8	.R<12>
755: U235-1 U220-8 U241-6	.R<13>
756: U235-2 U220-10 U241-4	.R<14>
757: U235-3 U220-11 U241-2	.R<15>
758: U235-4 U221-7 U241-17	.R<16>
759: U234-11 U221-8 U241-15	.R<17>
760: U234-1 U221-10 U241-13	.R<18>
761: U234-2 U221-11 U241-11	.R<19>
762: U217-10 U236-11 U239-15	.R<2>
763: U239-17 U236-1 U217-11	.R<3>
764: U239-2 U218-7 U236-2	.R<4>
765: U239-4 U218-8 U236-3	.R<5>
766: U239-6 U218-10 U236-4	.R<6>
767: U239-8 U218-11 U214-11	.R<7>
768: U214-1 U240-8 U219-7	.R<8>
769: U214-2 U240-6 U219-8	.R<9>
770: U197-5 U199-2 U200-1 U178-4 U179-2	
770:	.RA<1>
771: U197-6 U199-5 U200-2 U178-5 U179-5	
771:	.RA<2>
772: U197-7 U199-7 U200-3 U178-12 U179-11	
772:	.RA<3>
773: U106-11 U105-11 U104-11 U103-11 U102-11	
773: U101-11 U99-11 U100-11 U125-18	.RAM CS L

774: U106-9 U105-9 U104-9 U103-9 U102-9  
 774: U101-9 U99-9 U100-9 U125-19 .RAM WE L  
  
 775: U111-16 .RCV ALL  
 \*\*\* Only one pin in net  
  
 776: U134-6 .RCV CLK H  
 \*\*\* Only one pin in net  
  
 777: U134-5 .RCV CLK L  
 \*\*\* Only one pin in net  
  
 778: U230-14 U211-3 .RD BIT CNT L  
  
 779: R32-2 JB48-1 U8-6 .RD DATA +  
  
 780: R32-1 U8-7 JB49-1 .RD DATA -  
  
 781: U38-1 U38-2 U8-5 .RD DATA H  
  
 782: U233-12 U11-19 U11-1 U85-1 U88-1  
 782: U51-1 U67-1 U67-13 .RD DISK STAT L  
  
 783: U233-14 .RD FP RESULT L  
 \*\*\* Only one pin in net  
  
 784: U57-19 U233-15 .RD FP STAT L  
  
 785: JB36-1 U32-16 RN6-6 .RD GATE  
  
 786: U146-11 RN8-8 U144-21 U126-3 U127-1  
 786: U159-22 U158-32 U160-22 U157-32 U145-2  
 786: U23-2 U125-2 .RD L  
  
 787: U233-13 .RD NET STAT L  
 \*\*\* Only one pin in net  
  
 788: U167-16 U152-16 U167-9 U152-9 U126-20  
 788: U233-11 .RD UPROC DATA L  
  
 789: U161-19 U233-10 .RD UPROC STAT L  
  
 790: U230-15 U196-9 U211-5 .RD USEC CLK L  
  
 791: U28-3 U6-1 U3-1 U68-18 U29-1 U28-13  
 791: U49-15 U50-4 U28-4 U49-14 .RESET D L  
  
 792: U176-12 U211-2 .RESET FIFO & CRC L  
 \*\*\* Run Has no outputs  
  
 793: U127-13 U145-1 U129-11 .RESET H

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794: U172-2 U167-18 U152-18 U48-18 U64-18
794: U144-26 U158-21 U157-21 U147-19 U80-1
794: U129-10 U174-15 .RESET L

795: U112-16 .RESET NET H
*** Only one pin in net

796: U111-15 U112-4 .RESET NET L

797: U190-4 J87-1 .RS232 CD A

798: U205-4 J193-1 .RS232 CD B

799: U190-1 J86-1 .RS232 CTS A

800: U205-1 J192-1 .RS232 CTS B

801: U207-8 J82-1 .RS232 DTR A

802: J188-1 U189-8 .RS232 DTR B

803: U190-13 J182-1 .RS232 RC IN A

804: U205-13 J196-1 .RS232 RC IN B

805: U190-10 J84-1 .RS232 RD A

806: U205-10 J191-1 .RS232 RD B

807: U143-13 U143-12 U158-10 .RS232 RQST L

808: U207-6 J184-1 .RS232 RTS A

809: J189-1 U189-6 .RS232 RTS B

810: J83-1 U188-10 .RS232 TC IN A

811: J186-1 U188-13 .RS232 TC IN B

812: U207-11 J181-1 .RS232 TC OUT A

813: J187-1 U189-11 .RS232 TC OUT B

814: U207-3 J183-1 .RS232 TD A

815: J88-1 U189-3 .RS232 TD B

816: U202-3 .RVC DATA OUT
*** Only one pin in net
*** Run Has no outputs

817: U109-5 U110-12 U179-1 .RW

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818: U179-4 U164-3 U163-11	.RWA<1>
819: U179-7 U164-6 U163-10	.RWA<2>
820: U179-9 U164-10 U163-9	.RWA<3>
821: U114-5 U180-9	.S CLK 1
822: U178-9 U23-6 U228-9	.S CLK 3
823: U114-2 U109-3 U110-6	.S TIME<0>
824: U109-4 U114-3 U110-9	.S TIME<1>
825: JB14-1 RN4-2 U134-12	.SECTOR CLK
826: U33-13 JB32-1 U11-8 RN4-5	.SEEK ERR
827: U80-11 U81-9	.SEL CLK CTRL L
828: U23-1 U23-10 U81-7	.SEL CLK DATA L
829: U159-21 U133-4	.SEL CTC A L
830: U160-21 U133-5	.SEL CTC B L
831: U172-1 U81-11	.SEL DMA FLUSH L
832: U127-11 U44-12	.SEL DMA L
833: U83-5 U81-12	.SEL DMA START L
834: U145-4 U44-13	.SEL FLOPPY L
835: U147-3 U44-15	.SEL GPIB L
836: U126-1 U44-9	.SEL INT L
837: U124-13 U48-9 U64-9 U48-16 U64-16	
837: U81-15	.SEL IOD RD L
838: U85-19 U81-13	.SEL IOD STAT L
839: U83-12 U167-1 U152-1 U81-14	.SEL IOD WR L
840: U172-13 U44-14	.SEL SIO A L
841: U157-35 U44-11	.SEL SIO B L
842: U196-8 U173-4 U211-12	.SEL USEC CLK L

843: U15-3 JA14-1	.SIDE SEL L
844: U127-14 U172-12 U143-14	.SIO ACK L
845: U158-7 U157-6	.SIO INT ENB
846: U127-17 U143-9	.SIO RQST L
847: U4-7 U3-3 U25-1 U25-2	.SMA<0>
848: U4-9 U3-4 U25-13	.SMA<1>
849: U3-2 U26-1 U5-1 U24-1 U2-1	.SMD ADDR<0>
850: U3-5 U26-2 U5-2 U24-2 U2-2	.SMD ADDR<1>
851: U3-6 U26-3 U5-3 U24-3 U2-3	.SMD ADDR<2>
852: U3-9 U26-4 U5-4 U24-4 U2-4	.SMD ADDR<3>
853: U3-12 U26-5 U5-5 U24-5 U2-5	.SMD ADDR<4>
854: U3-15 U26-16 U5-16 U24-16 U2-16	.SMD ADDR<5>
855: U3-16 U26-17 U5-17 U24-17 U2-17	.SMD ADDR<6>
856: U3-19 U26-18 U5-18 U24-18 U2-18	.SMD ADDR<7>
857: U6-5 U5-19 U24-19 U2-19 U26-19	.SMD ADDR<8>
858: U158-26 U187-13	.SPEAK DATA IN
859: J81-1 C126-2	.SPEAKER
860: U112-12 U187-14	.SPEECH CLK
861: U143-11 U143-10 U158-30	.SPEECH RQST L
862: U143-2 U174-5	.SPEECH SEL L
863: U15-12 RN6-3 JA36-1	.STEP L
864: U40-13 U19-4 U19-12	.SYNC BITS
865: U7-12 U9-15	.T BIT
866: U7-13 U9-19	.T2 BIT
867: C103-1 R5-1 J92-1	.TABLET CLK
868: U112-13 J93-1 R4-1	.TABLET DATA L

869: U192-12 .TC IN B  
 \*\*\* Only one pin in net  
 \*\*\* Run Has no outputs

870: U80-18 U23-8 .TESTCLK

871: U166-6 U223-17 U224-17 U244-17 U245-17  
 871: U223-13 U224-13 U244-13 U245-13 .TOP DISK

872: J4-1 U181-12 .TOP EXT A L

873: U181-13 J73-1 .TOP EXT B L

874: U166-8 .TOP NET  
 \*\*\* Only one pin in net

875: U166-11 U186-16 U185-16 U171-16 U170-16  
 875: U170-9 U171-9 U186-9 U185-9 .TOP UPROC

876: U111-12 .TRANSMIT H  
 \*\*\* Only one pin in net

877: U118-3 U118-11 U124-11 U46-16 U124-3  
 877: U127-12 U159-18 U159-15 U159-9 U160-18  
 877: U160-15 U160-9 U147-18 .TZ CLK

878: U85-6 JB12-1 U90-3 RN4-7 U67-11 .UNIT READY

879: U16-9 JA26-1 .UNIT SEL L

880: U200-10 U68-16 .UNLD DISK RQST L

881: J137-1 U200-12 U193-12 .UNLD EXT A RQST L

882: J37-1 U200-13 .UNLD EXT B RQST L

883: U201-3 .UNLD NET RQST L  
 \*\*\* Only one pin in net

884: U200-9 U194-13 .UNLD UPROC RQST L

885: U162-4 U129-2 .UPROC ENB

886: J53-1 U162-6 .UPROC INT L

887: U161-15 U83-9 U128-1 U85-13 .UPROC RDY

888: U83-10 U129-7 .UPROC RDY ENB

889: J172-1 U83-8 .UPROC RDY INT L

890: U195-3 U194-9 .UPROC RQST H

891: U213-13 U146-1 U133-13 U174-6 .UPROC WR H  
892: U173-6 U132-5 .USEC CLK OVFL H  
893: U196-14 U211-18 .USEC I<2>  
894: U178-2 U180-4 U181-1 U179-3 .WA<1>  
895: U178-7 U180-5 U181-2 U179-6 .WA<2>  
896: U178-10 U180-12 U181-3 U179-10 .WA<3>  
897: U5-11 U27-2 .WAIT H  
898: U145-21 U228-13 U175-13 .WCLK  
899: U149-15 U216-2 .WCNT L  
900: U216-4 U221-15 .WHI L  
901: U218-15 U217-15 U216-3 U220-15 U219-15  
901: .WLO L  
902: U8-10 JB42-1 .WR CLK +  
903: JB43-1 .WR CLK -  
\*\*\* Only one pin in net  
904: U40-1 U224-22 U244-22 U245-22 U223-22  
904: .WR DATA  
905: JB39-1 U10-3 U10-4 .WR DATA +  
906: JB40-1 U10-1 U10-2 .WR DATA -  
907: JB30-1 U32-18 RN6-5 .WR GATE  
908: U146-10 U130-6 U126-2 U159-23 U160-23  
908: U147-4 U145-3 U125-1 U23-9 .WR L  
909: U148-5 U216-5 .WREG L  
910: U114-12 U57-1 .X CONST ENB L  
911: U57-12 .X MUX<0>  
\*\*\* Only one pin in net  
912: U57-14 .X MUX<1>  
\*\*\* Only one pin in net  
913: U57-16 .X MUX<2>

\*\*\* Only one pin in net

914: U57-18 .X MUX<3>  
 \*\*\* Only one pin in net

915: U114-14 .X SEL<0>  
 \*\*\* Only one pin in net  
 \*\*\* Run Has no outputs

916: U114-13 .X SEL<1>  
 \*\*\* Only one pin in net  
 \*\*\* Run Has no outputs

917: U32-9 .Y MUX<0>  
 \*\*\* Only one pin in net

918: U32-7 .Y MUX<1>  
 \*\*\* Only one pin in net

919: U32-5 .Y MUX<2>  
 \*\*\* Only one pin in net

920: U32-3 .Y MUX<3>  
 \*\*\* Only one pin in net

921: U32-19 .Y SEL<3>  
 \*\*\* Only one pin in net  
 \*\*\* Run Has no outputs

922: U46-18 U144-6 R3-2 U158-20 U157-20  
 922: .Z CLK

923: RN8-4 U144-16 U126-17 U158-5 U157-5  
 923: .Z80 INT L

924: RN8-2 U144-24 U127-6 .Z80 WAIT L



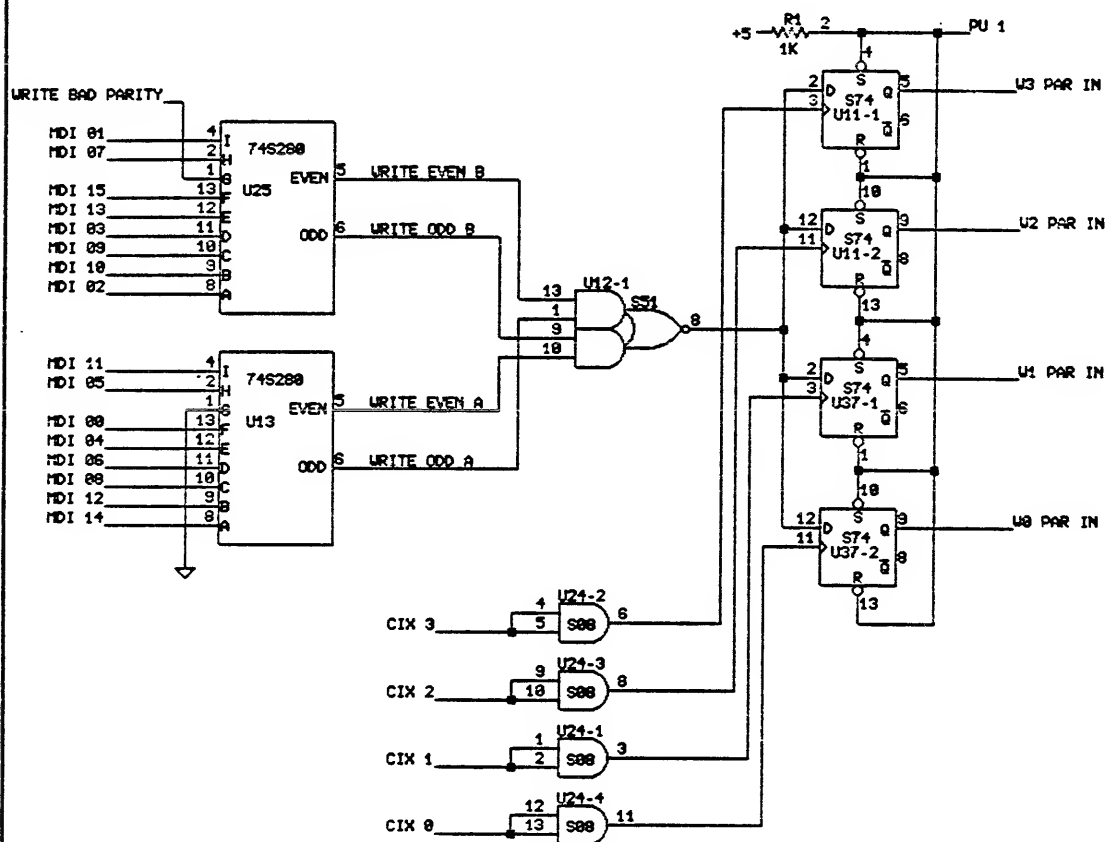
MULTI MEG LANDSCAPE		Word 0		Word 1		Word 2		Word 3	
		MEM 0,4		MEM 1,5		MEM 2,6		MEM 3,7	
		RAS 0		RAS 0		RAS 0		RAS 0	
		CAS A 1		CAS A 1		CAS A 1		CAS A 1	
BITS	DATA	BANK A		BANK A		BANK A		BANK A	
0	1	U1		U3		U5		U7	
1	2	U14		U16		U18		U20	
2	4	U27		U29		U31		U33	
3	10	U40		U42		U44		U46	
4	20	U53		U55		U57		U59	
5	40	U65		U67		U69		U71	
6	100	U78		U80		U82		U84	
7	200	U91		U93		U95		U97	
8	400	U104		U106		U108		U110	
9	1K	U117		U119		U121		U123	
10	2K	U131		U133		U135		U137	
11	4K	U144		U146		U148		U150	
12	10K	U157		U159		U161		U163	
13	20K	U170		U172		U174		U176	
14	40K	U182		U184		U186		U188	
15	100K	U196		U198		U200		U202	
P	PAR	U209		U211		U213		U215	

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TITLE  
2 Meg Memory Array  
array

PERQ	DESIGNED	RUSS SCHUER		SIZE	CODE	IDENTIFICATION	VAR	REV
	DRAWN	CERTICH	22 Mar 84	A	11	0245	02	A
	UPDATED	CERTICH	03 Jan 85	PROJ : 2 MEGABYTE LANDSCAPE / w/256k MEMORY			PAGE 1 OF 1	



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TITLE

MEMORY DATA IN PARITY CALCULATION

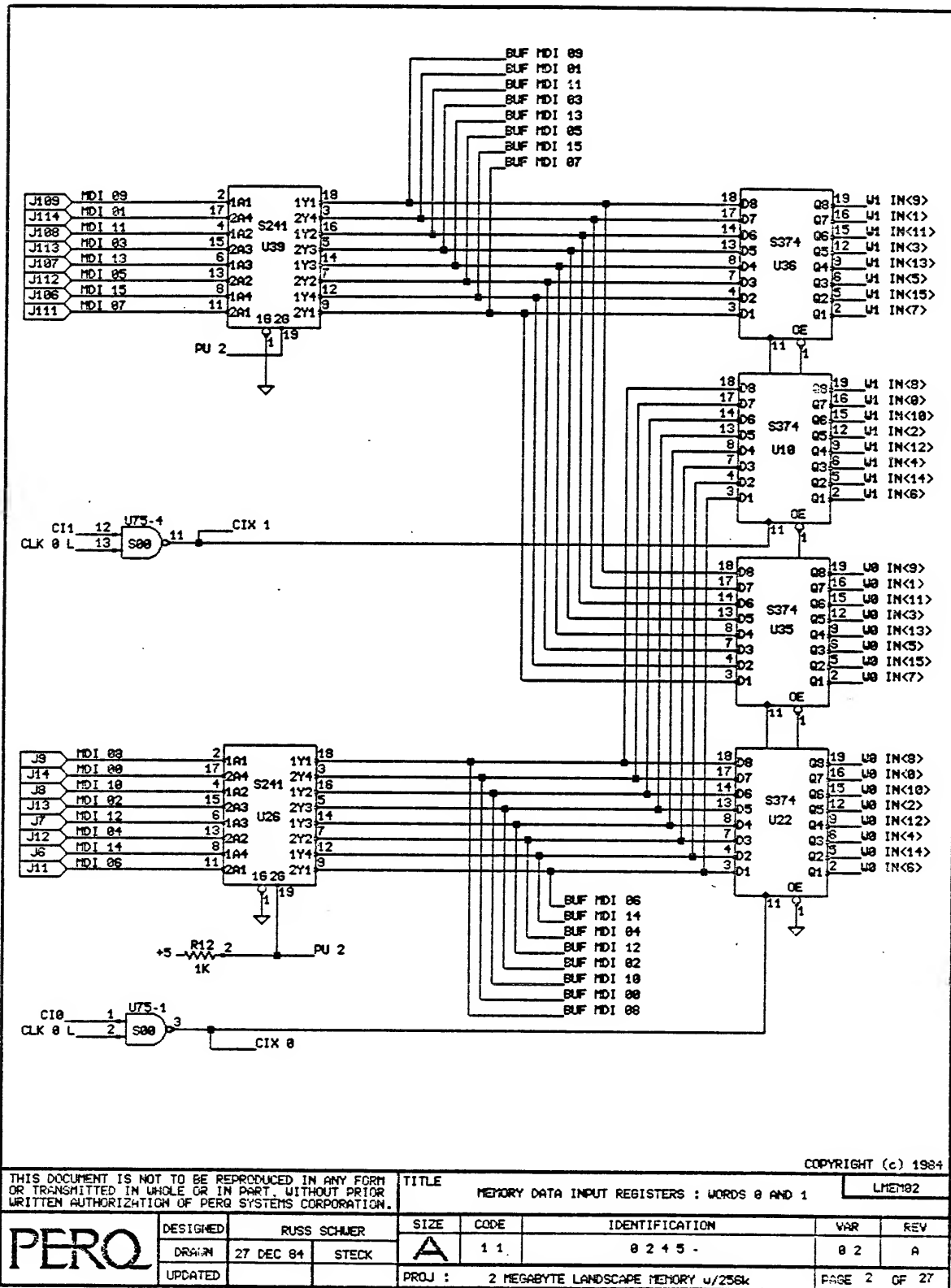
LHENS1

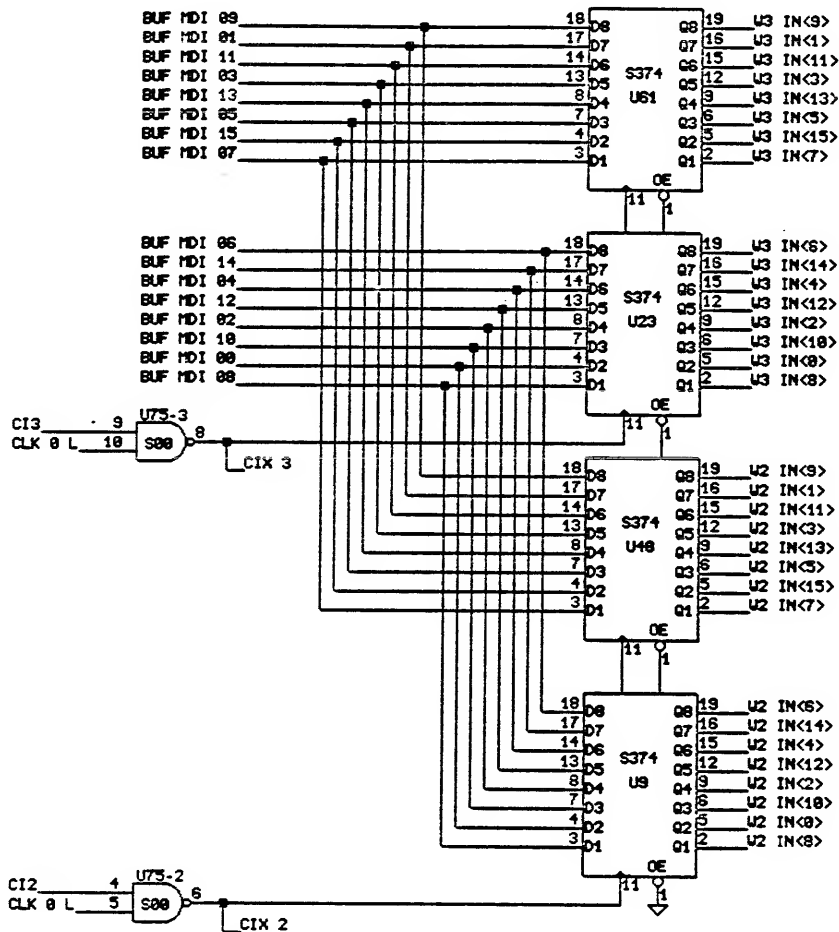
PERQ

DESIGNED	RUSS SCHMER
DRAWN	27 DEC 84 STECK
UPDATED	

SIZE	CODE	IDENTIFICATION
A	1 1	0 2 4 5 -
PROJ : 2 MEGABYTE LANDSCAPE MEMORY w/256k		

VAR	REV
0 2	A
PAGE 1 OF 27	





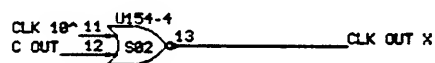
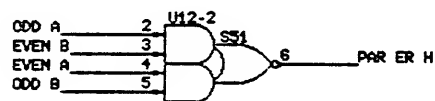
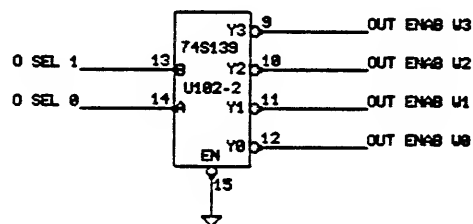
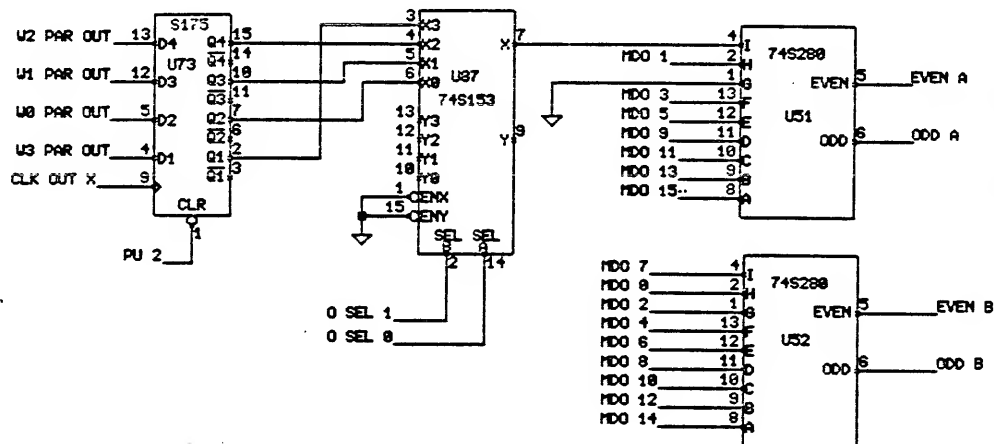
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TITLE  
MEMORY DATA INPUT REGISTERS : WORDS 2 AND 3

LME133

PERQ	DESIGNED	RUSS SCHUER	SIZE	A	CODE	1 1	IDENTIFICATION	0 2 4 5 -	VAR	0 2	REV	A
	DRAWN	27 DEC 84	STECK									
	UPDATED											
PROJ : 2 MEGABYTE LANDSCAPE MEMORY w/256k										PAGE 3 OF 27		



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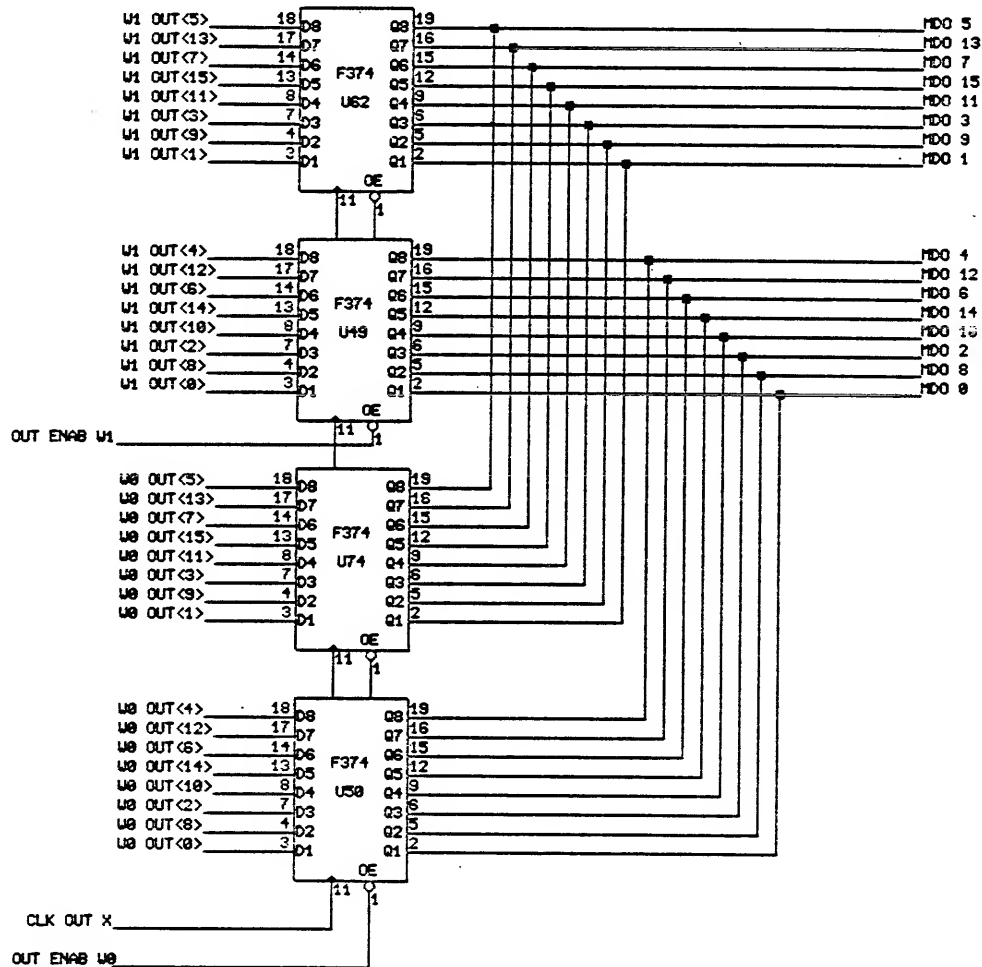
TITLE

MEMORY DATA OUTPUT

LME104

PERQ

DESIGNED	RUSS SCHMER		SIZE	CODE	IDENTIFICATION	VAR	REV
DRAWN	27 DEC 84	STECK	A	1 1	0 2 4 5 -	0 2	A
UPDATED			PROJ : 2 MEGABYTE LANDSCAPE MEMORY u/256k				PAGE 4 OF 27



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TITLE

DATA OUTPUT REGISTERS : WORDS 0 AND 1

LME785

PERQ

DESIGNED RUSS SCHWER  
DRAWN 27 DEC 84 STECK  
UPDATED

SIZE  
A

CODE  
1 1

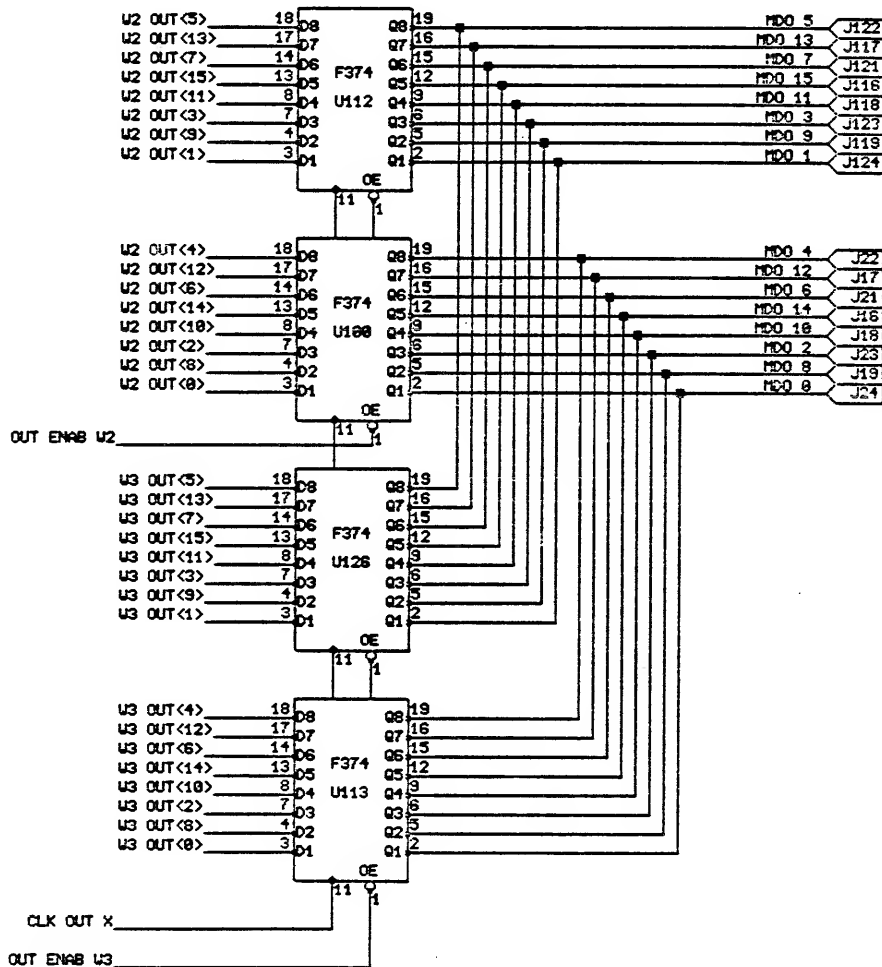
IDENTIFICATION  
0 2 4 5 -

VAR  
0 2

REV  
A

PROJ : 2 MEGABYTE LANDSCAPE MEMORY w/256k

PAGE 5 OF 27



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TITLE DATA OUTPUT REGISTERS : WORDS 2 AND 3

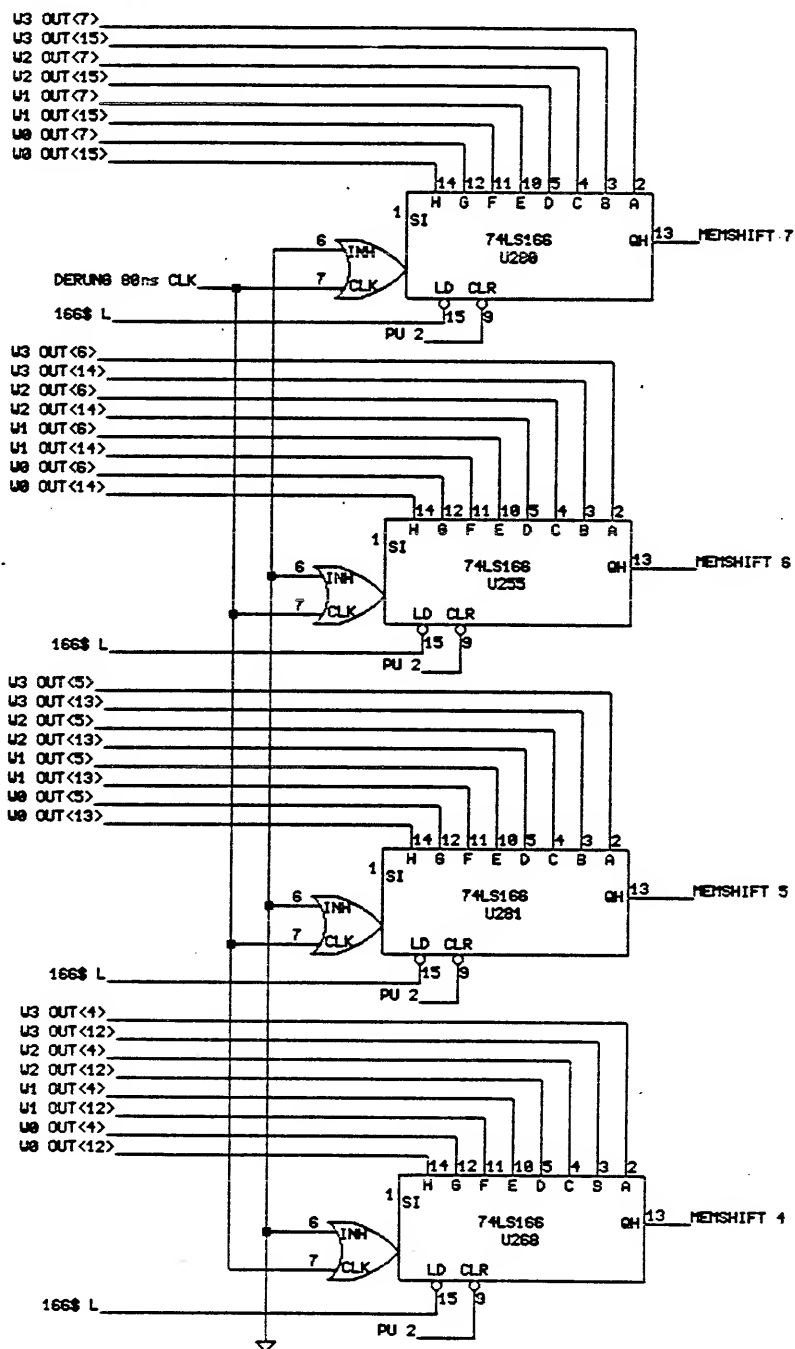
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PERQ

DESIGNED RUSS SCHMER  
DRAWN 27 DEC 84 STECK  
UPDATED

SIZE CODE IDENTIFICATION  
A 1 1 0 2 4 5 -  
PROJ : 2 MEGABYTE LANDSCAPE MEMORY w/256k

VAR REV  
0 2 A  
PAGE 6 OF 27



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TITLE  
MEMORY WORD MUX - 64 BITS to 8 BITS

LNEM87

PERQ

DESIGNED  
DRAWN  
UPDATED

RUSS SCHUER  
27 DEC 84  
STECK

SIZE  
A

CODE  
1 1

IDENTIFICATION  
0 2 4 5 -

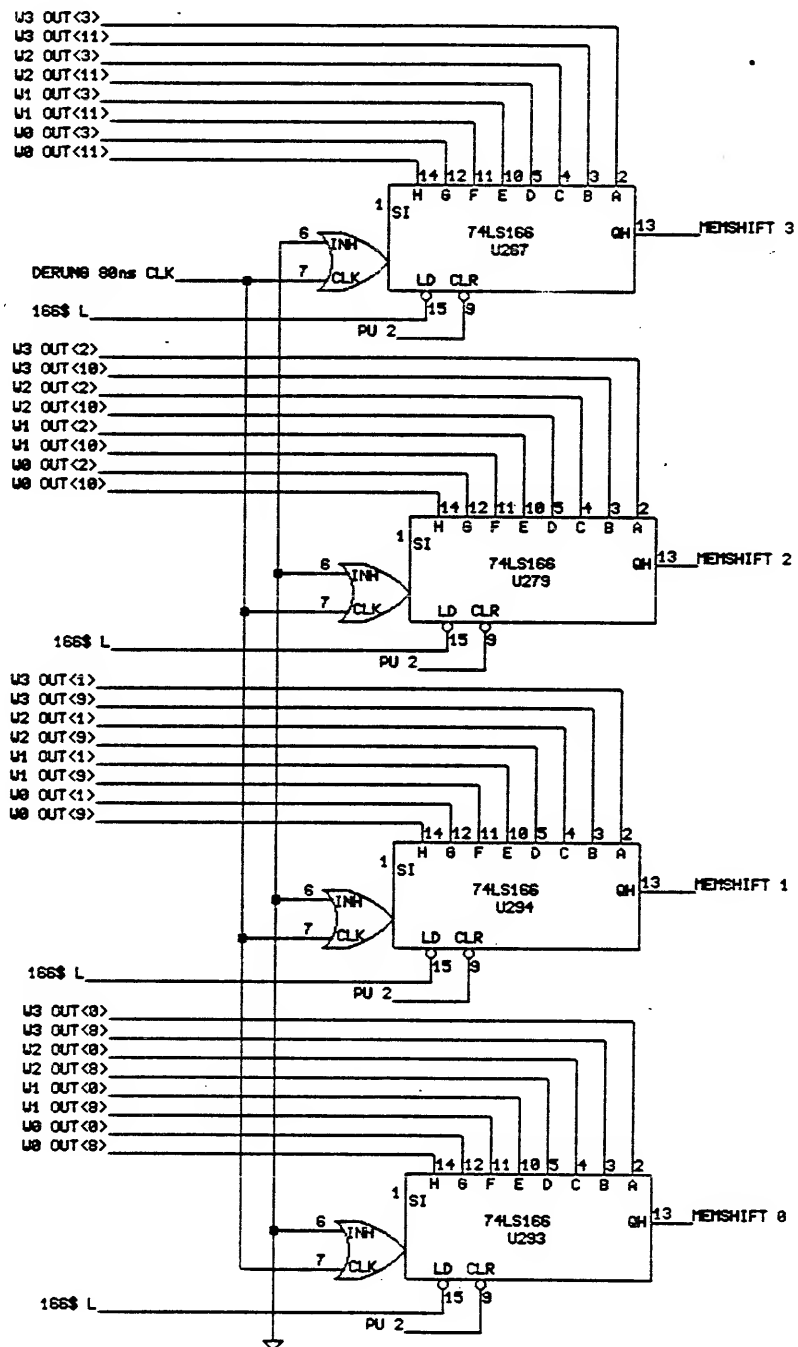
PROJ : 2 MEGABYTE LANDSCAPE MEMORY u/256k

VAR  
0 2

REV  
A

PAGE 7 OF 27





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TITLE

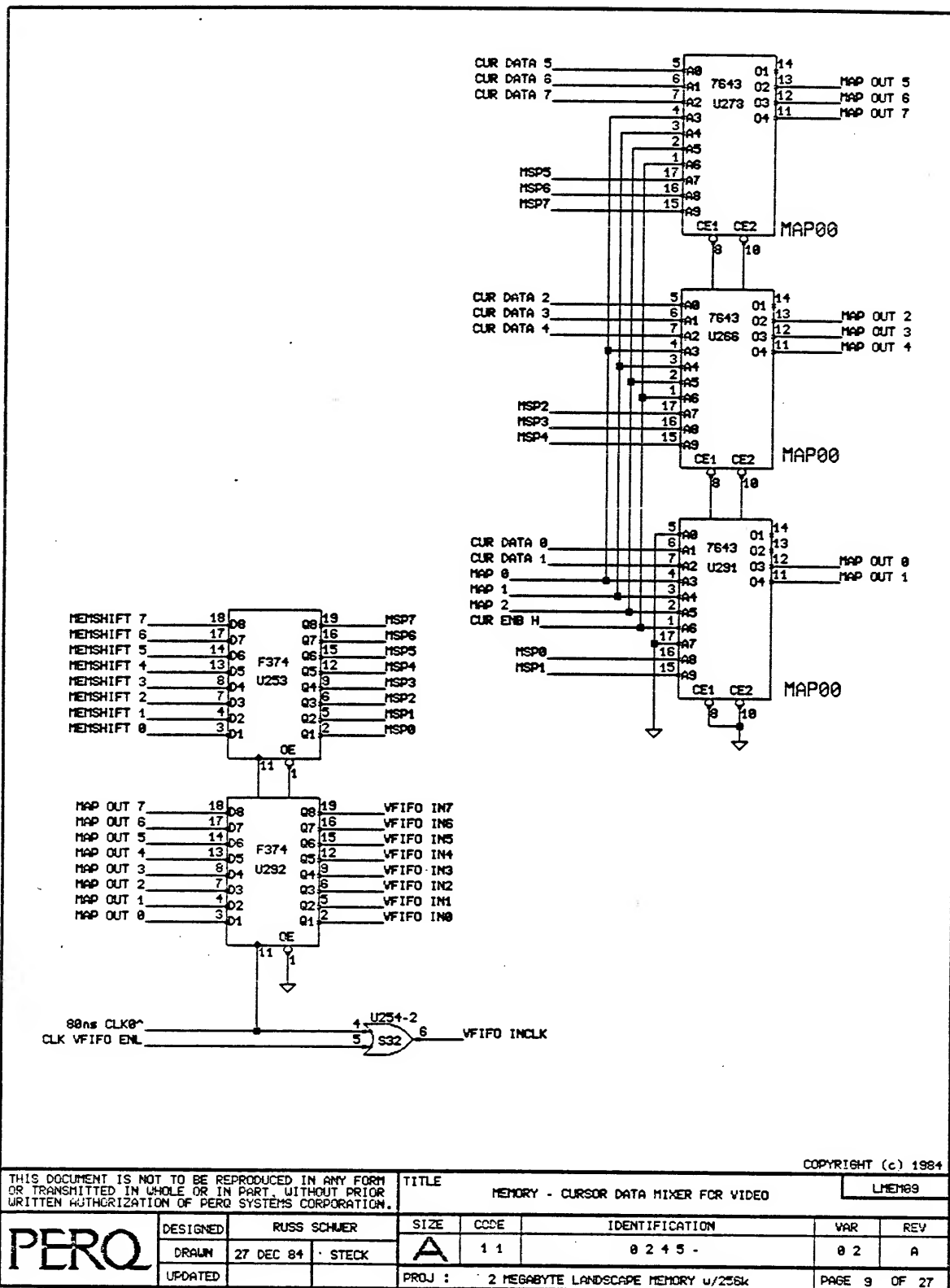
MEMORY WORD MUX - 64 BITS to 8 BITS

LH0103

PERQ

DESIGNED	RUSS SCHUER		
DRAWN	27 DEC 84	STECK	
UPDATED			

SIZE	CODE	IDENTIFICATION	VAR	REV
A	1 1	0 2 4 5 -	0 2	A
PROJ : 2 MEGABYTE LANDSCAPE MEMORY u/256k			PAGE 8 OF 27	



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LH069

PERQ

DESIGNED

RUSS SCHUER

DRAWN

27 DEC 84

STECK

UPDATED

SIZE

CODE

IDENTIFICATION

VAR

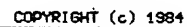
REV

PROJ :

2 MEGABYTE LANDSCAPE MEMORY u/256k

PAGE 9

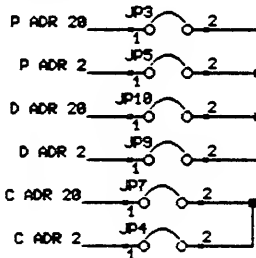
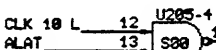
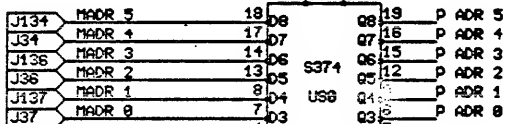
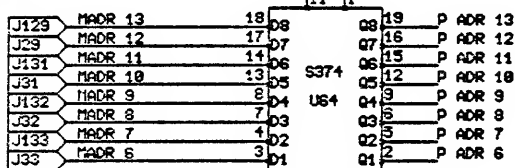
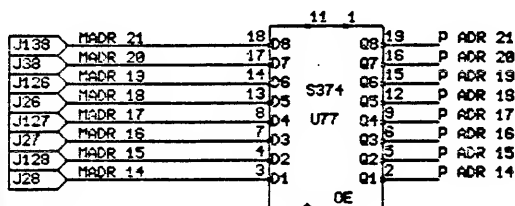
OF 27



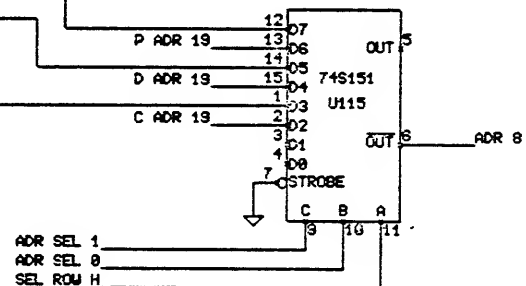
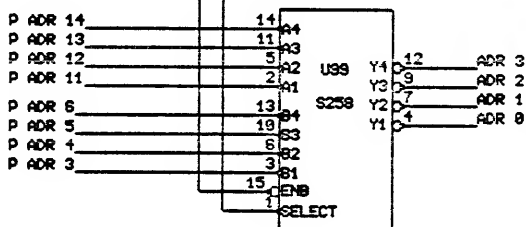
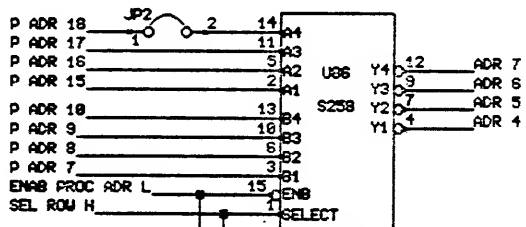
LMEM18

PERO

VAR	REV
0 2	A
PAGE 10 OF 27	



SEL ROW H	ADR SEL 1	ADR SEL 0	ADDRESS SOURCE	SIGNAL
0	0	0	NO CONNECT	
0	0	1	CURSOR COUNTER	C ADR 20
0	1	0	DISPLAY COUNTER	D ADR 20
0	1	1	PROCESSOR	P ADR 20
1	0	0	NO CONNECT	
1	0	1	CURSOR COUNTER	C ADR 2
1	1	0	DISPLAY COUNTER	D ADR 2
1	1	1	PROCESSOR	P ADR 2
JUMPER CONFIGURATION				JP2 JP3 JP5 JP9 JP7 JP4

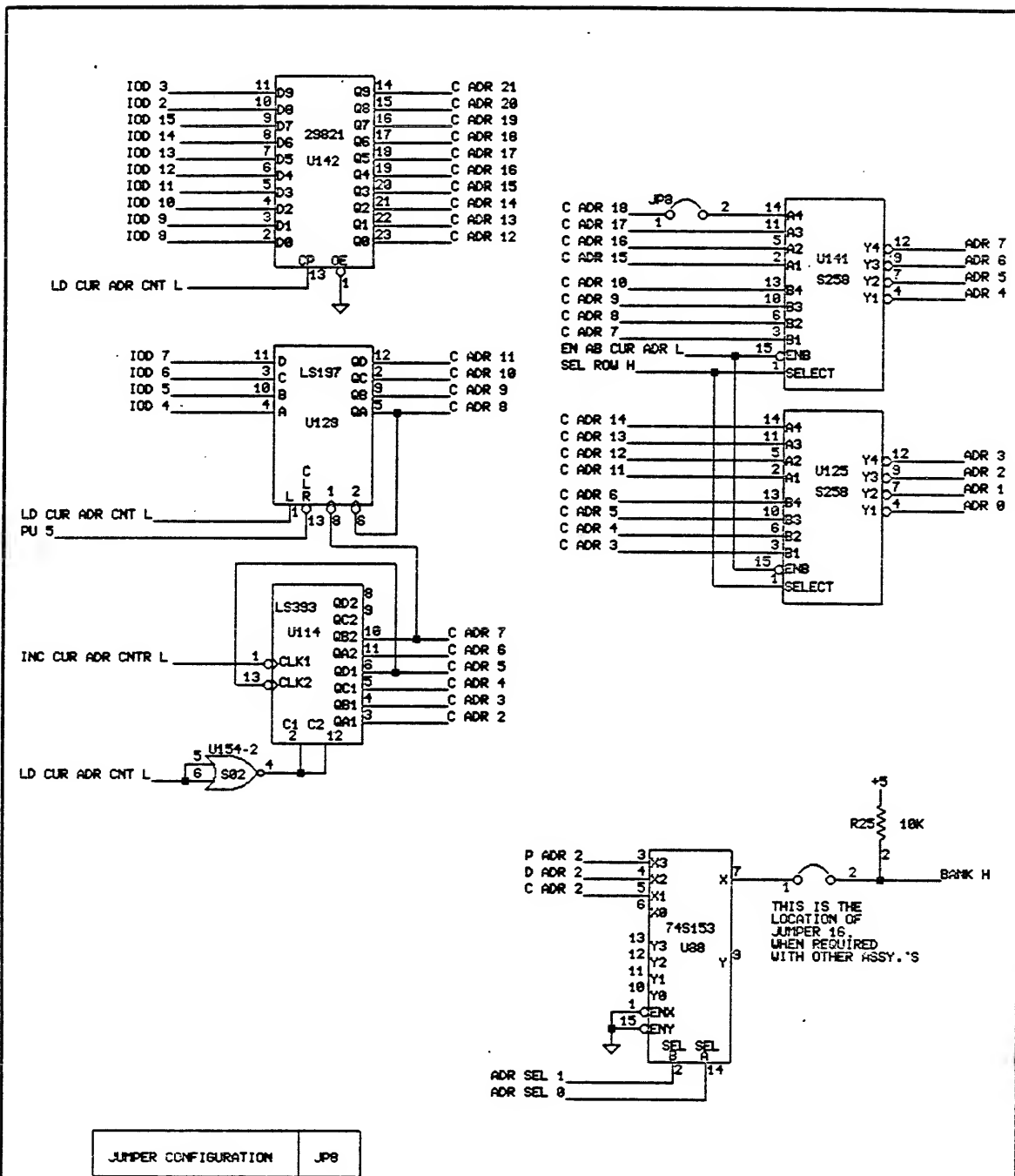


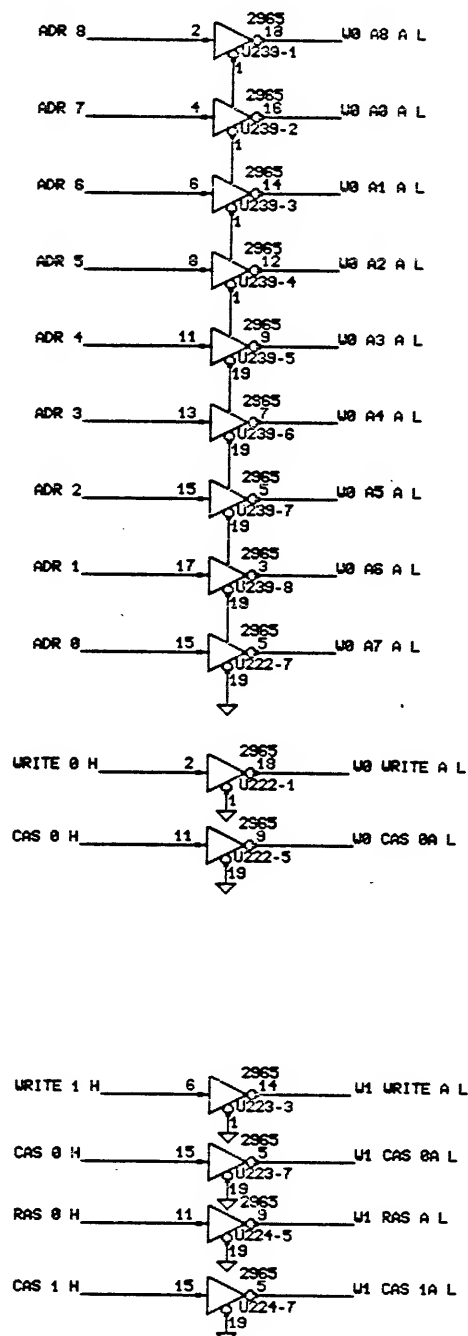
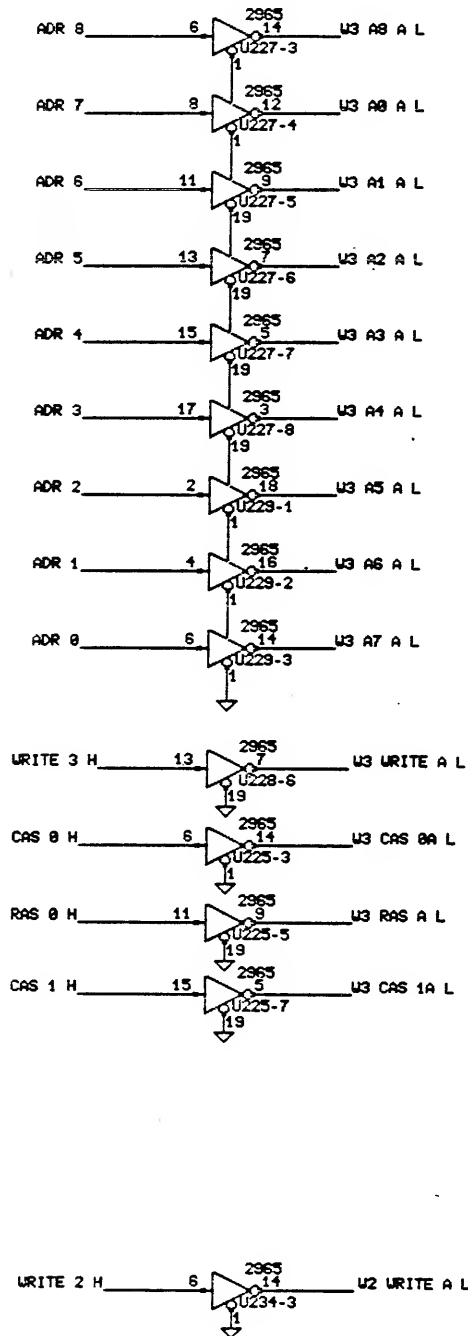
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TITLE		PROCESSOR/IO MEMORY ADDRESS MUX			LHM11	
SIZE	CODE	IDENTIFICATION		VAR	REV	
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PROJ :				2 MEGABYTE LANDSCAPE MEMORY U/256k	PAGE 11 OF 27	

PERQ



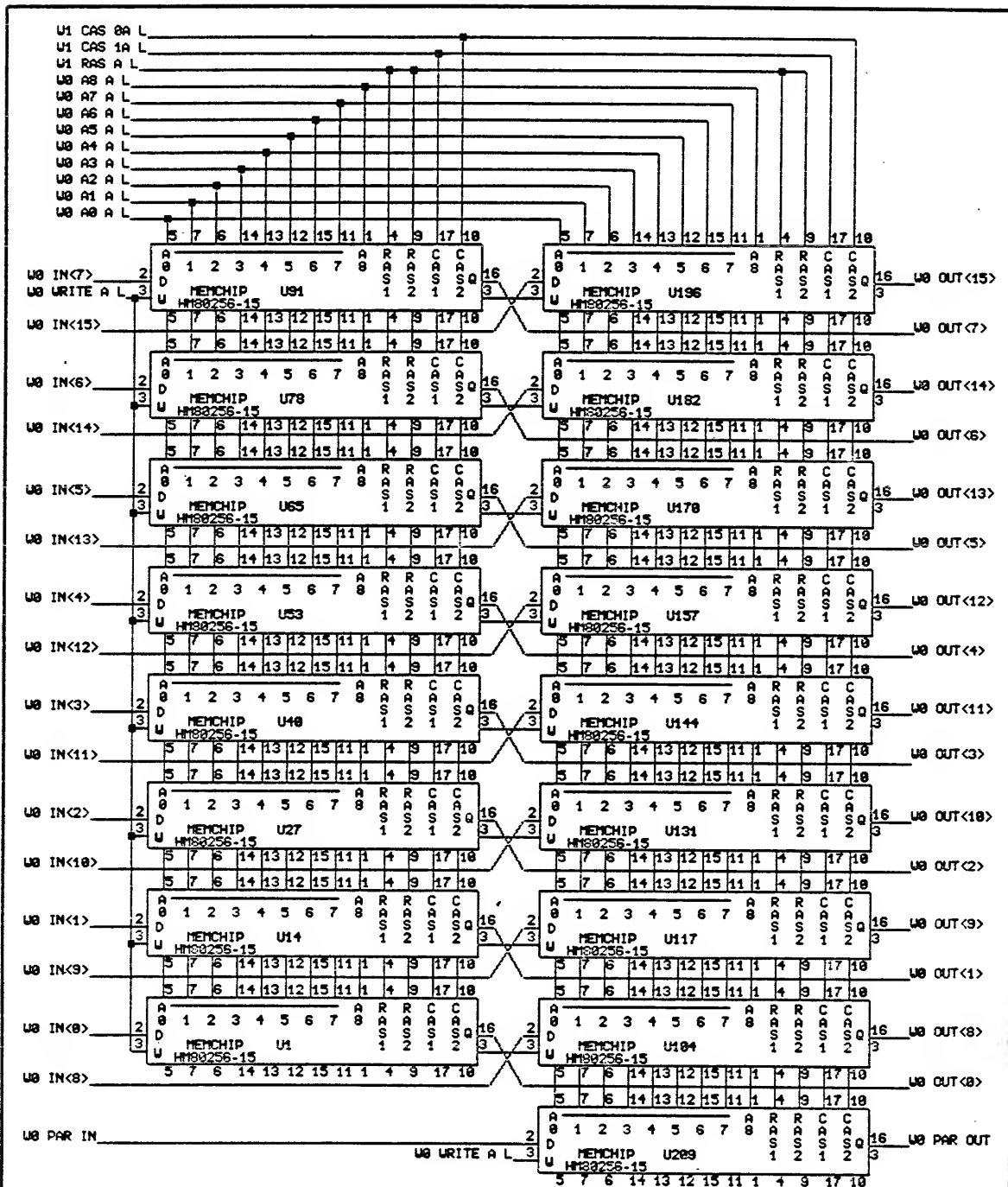


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TITLE  
MEMORY ADDRESS DRIVER WORD 3/ WORD 2/ WORD 1/ WORD 0  
LITEM13

PERQ	DESIGNED	RUSS SCHUER	SIZE	CODE	IDENTIFICATION	VAR	REV
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	UPDATED			PROJ :	2 MEGABYTE LANDSCAPE MEMORY U/256k	PAGE 13 OF 27	

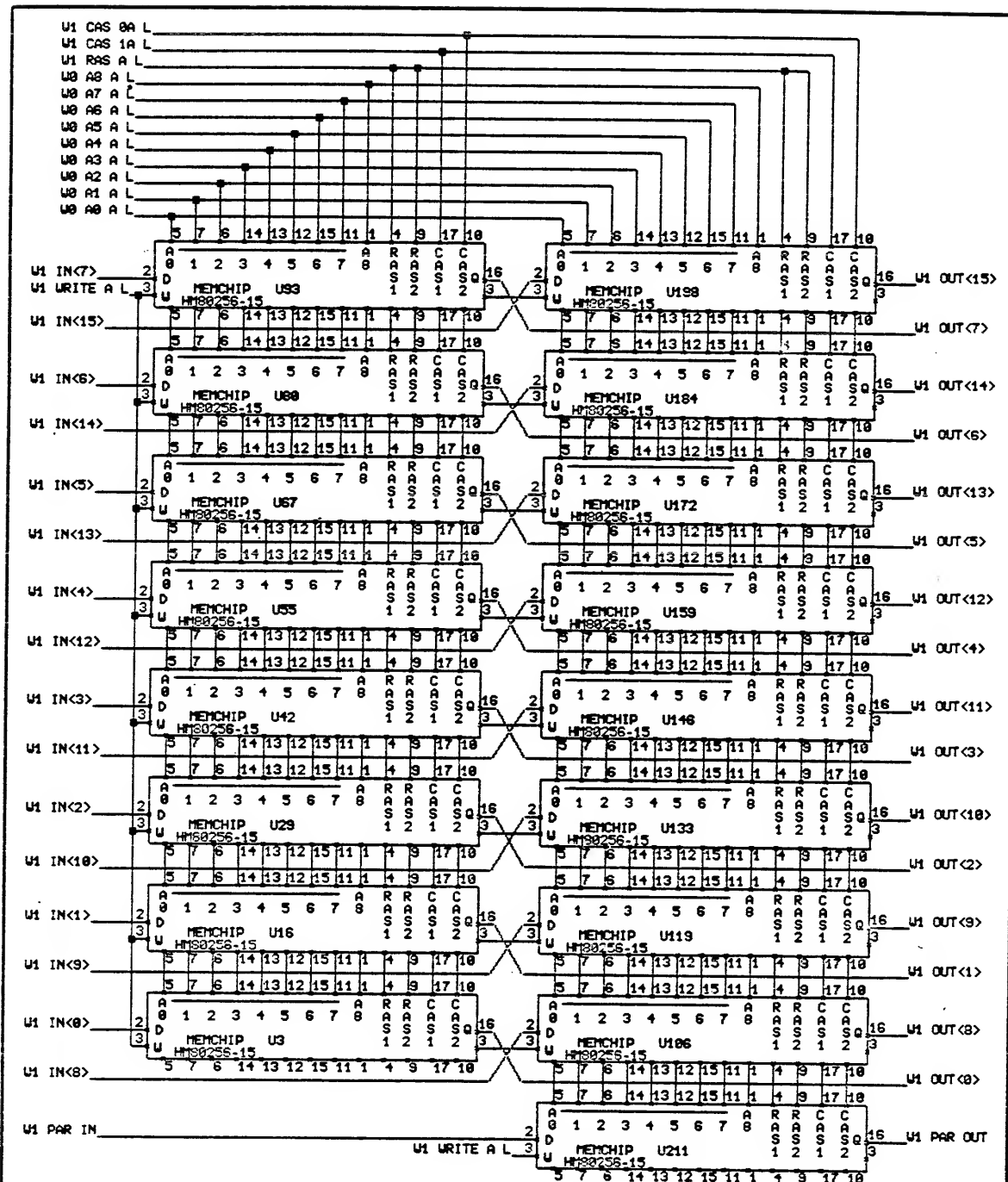
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PERQ	DESIGNED	RUSS SCHUER		SIZE	CODE	IDENTIFICATION				VAR	REV		
	DRAWN	27 DEC 84	STECK	A	1 1	.0 2 + 5 -				0 2	A		
	UPDATED			PROJ : 2 MEGABYTE LANDSCAPE MEMORY u/256k							PAGE 14 OF 27		



\* ALL MEMCHIPS SHOWN ARE 256K RAM.

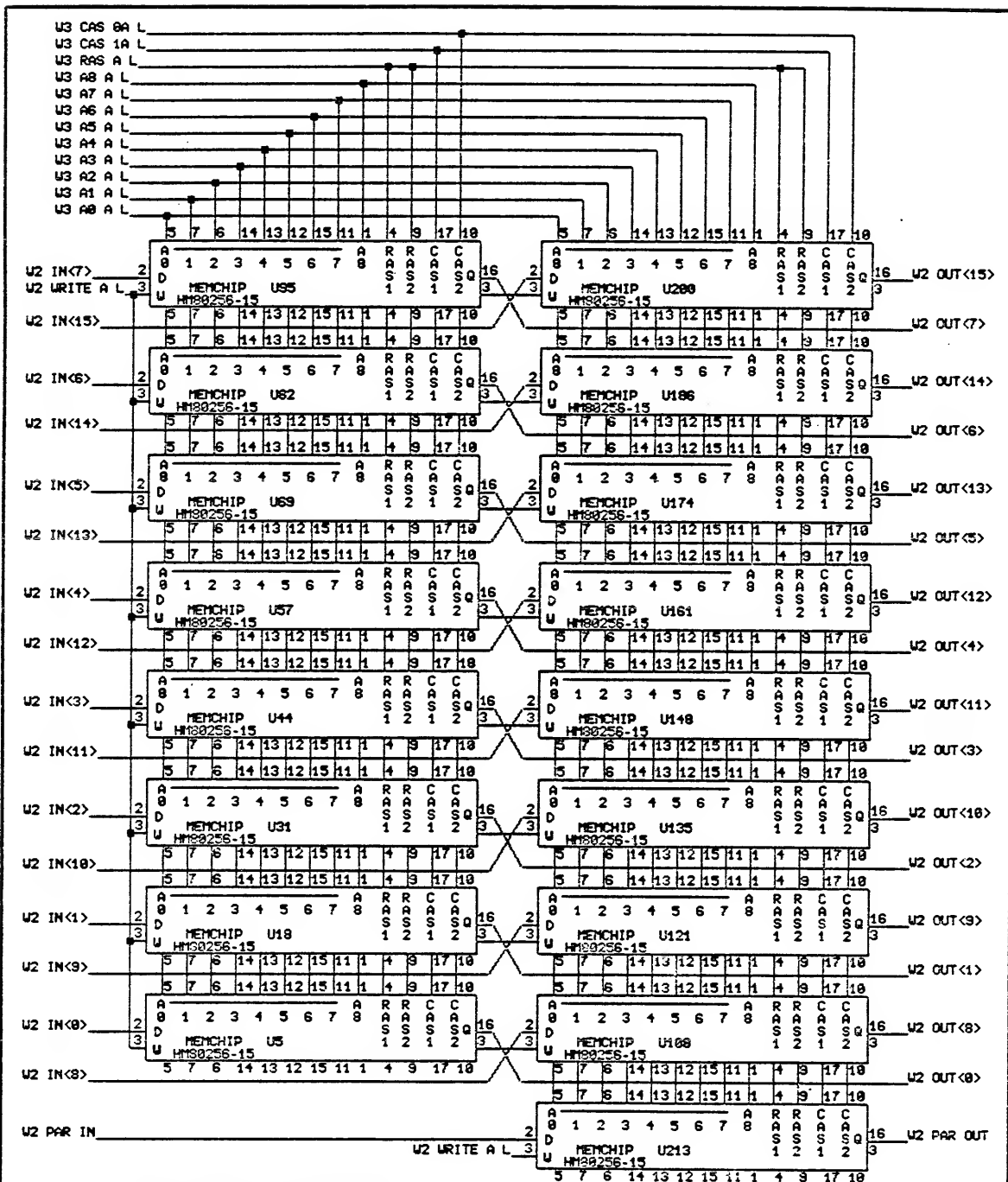
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TITLE				WORD 1 BANK A		LHEM15	
SIZE		CODE		IDENTIFICATION		VAR	REV
A		1 1		0 2 4 5 -		0 2	A
PROJ :				2 MEGABYTE LANDSCAPE MEMORY w/256k		PAGE 15 OF 27	

PERQ





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TITLE

WORD 2 BANK A

LMEM16

PERQ

DESIGNED  
DRAWN  
UPDATED

RUSS SCHUER  
27 DEC 84  
STECK

SIZE  
A

CODE  
1 1

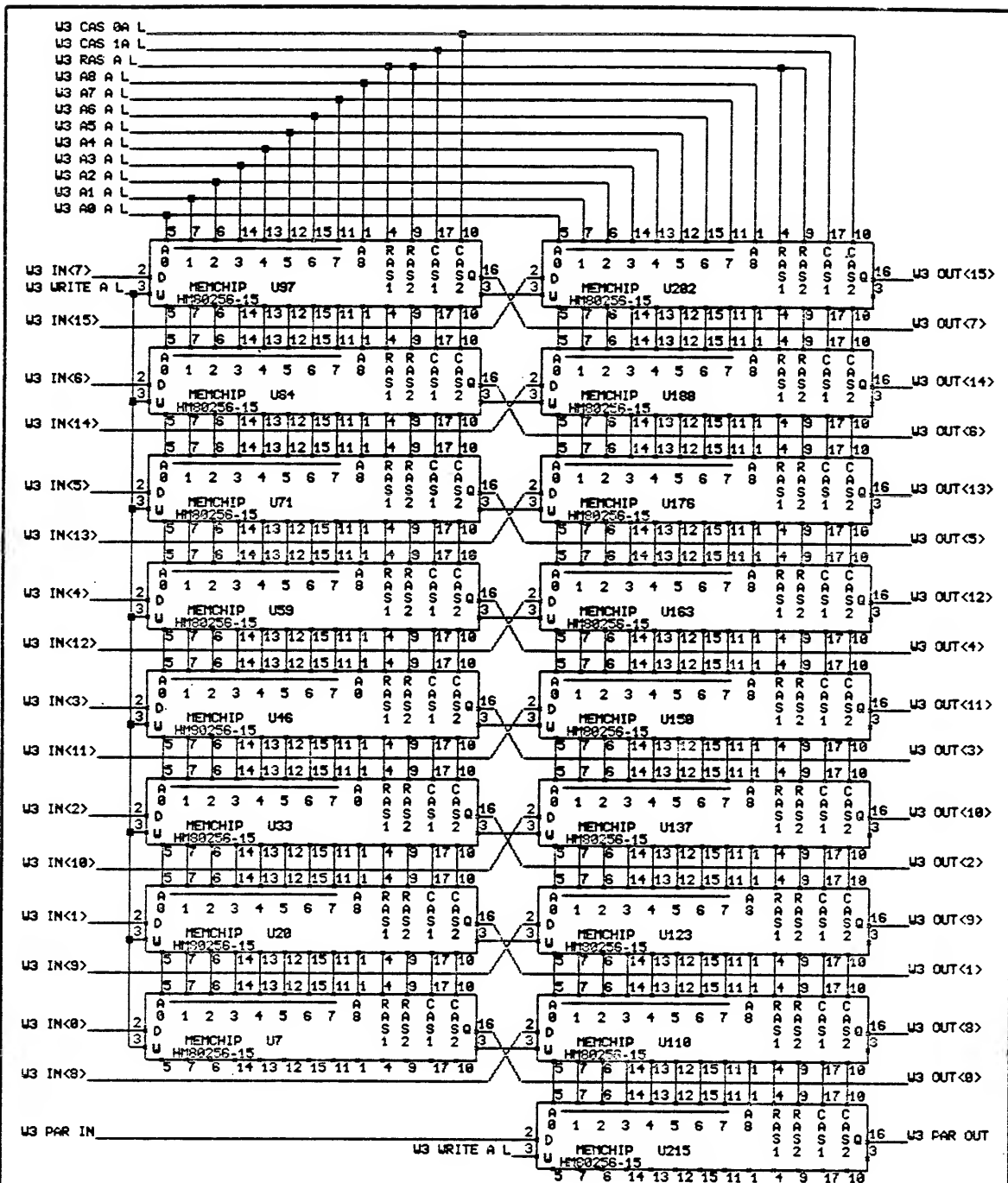
IDENTIFICATION  
0 2 4 5 -

VAR  
0 2

REV  
A

PROJ : 2 MEGABYTE LANDSCAPE MEMORY U/256K

PAGE 16 OF 27



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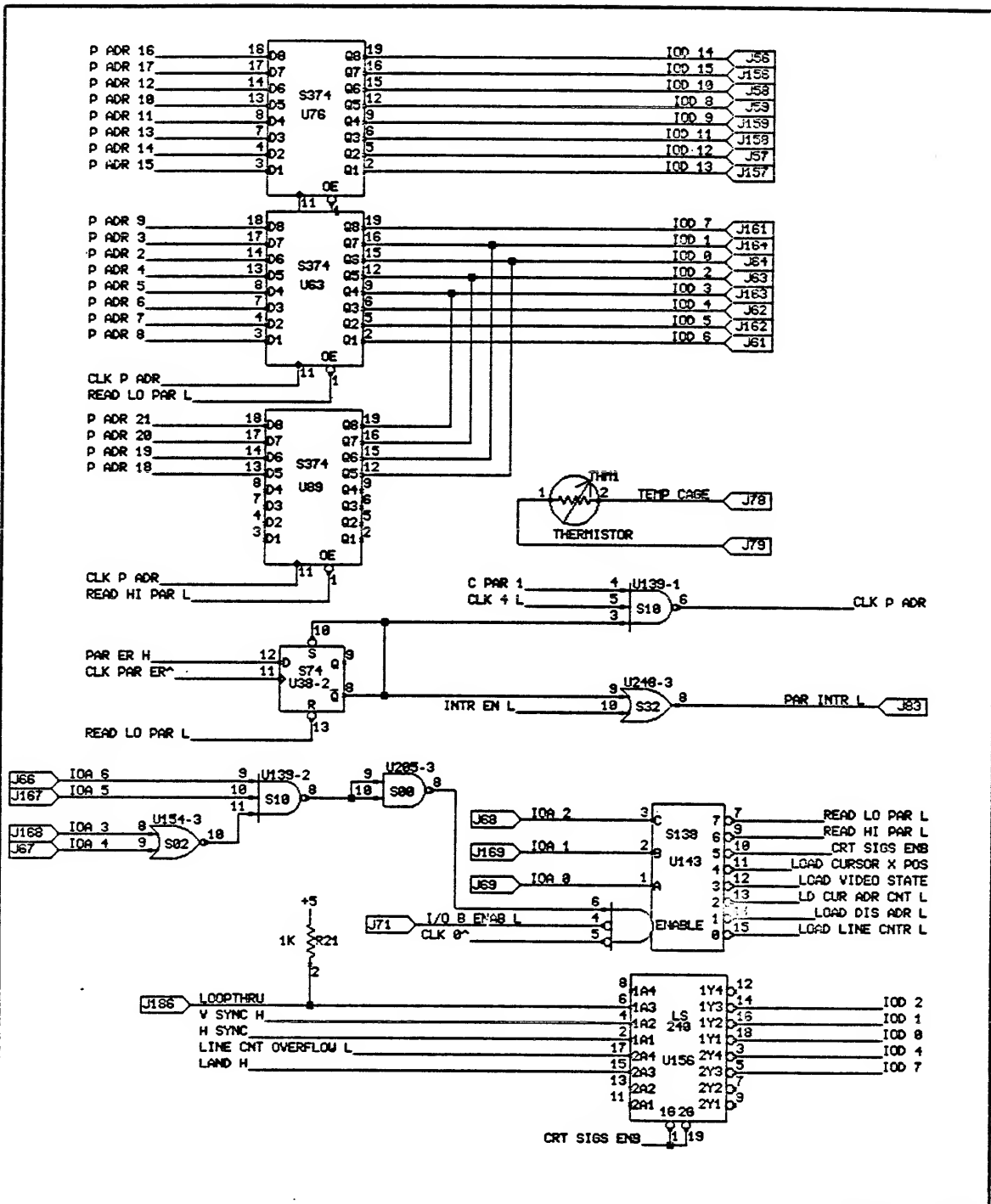
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SIZE	CODE	IDENTIFICATION	VSR	REV	
A	1 1	0 2 4 5 -	9 2	A	
PROJ : 2 MEGABYTE LANDSCAPE MEMORY w/256k			PAGE 17 OF 27		

PERQ



LNEM18

PERO



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TITLE

I/O STATUS REGISTERS

LMH113

PERQ

DESIGNED: RUSS SCHMER  
DRAWN: 27 DEC 84 STECK  
UPDATED:

SIZE  
A

CODE  
1 1

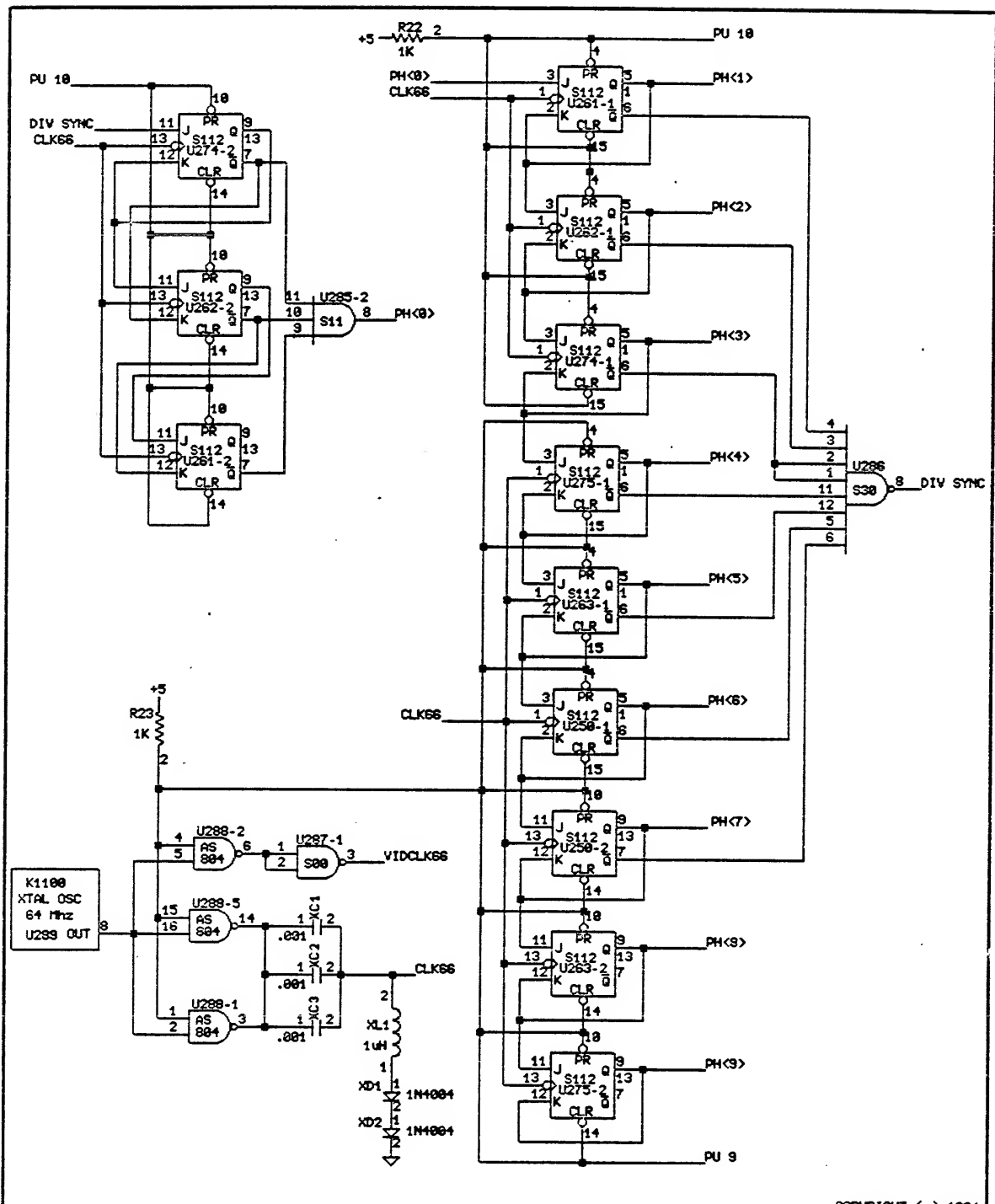
IDENTIFICATION  
0 2 4 5 -

VAR  
0 2

REV  
A

PROJ : 2 MEGABYTE LANDSCAPE MEMORY u/256k

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TITLE

CLOCK PHASE GENERATION LOGIC

LME120

**PERQ**

DESIGNED: RUSS SCHUER  
DRAWN: 27 DEC 84 STECK  
UPDATED:

SIZE  
**A**

CODE  
1 1

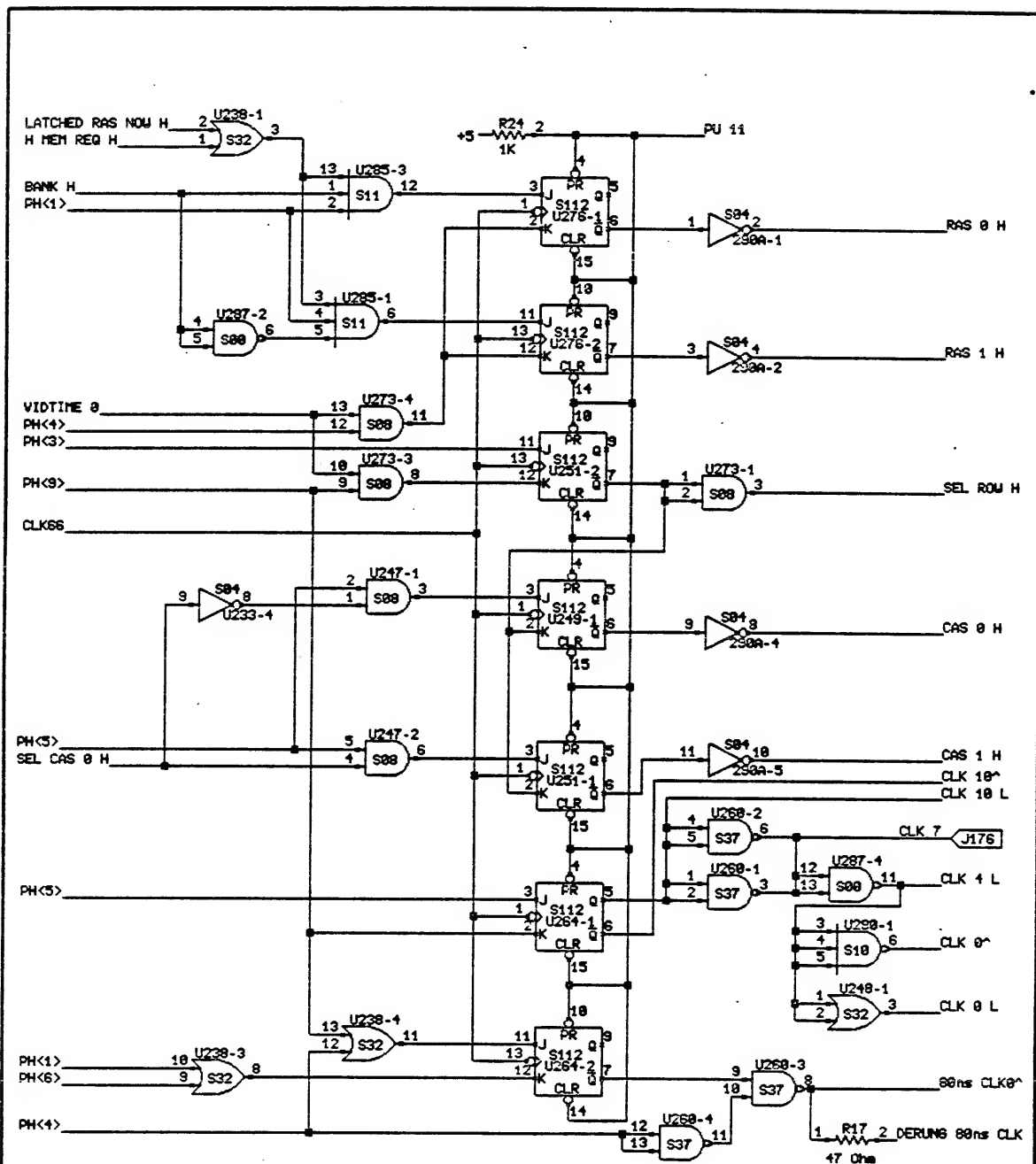
IDENTIFICATION  
0 2 4 5 -

VAR  
0 2

REV  
A

PROJ: 2 MEGABYTE LANDSCAPE MEMORY u/256k

PAGE 20 OF 27



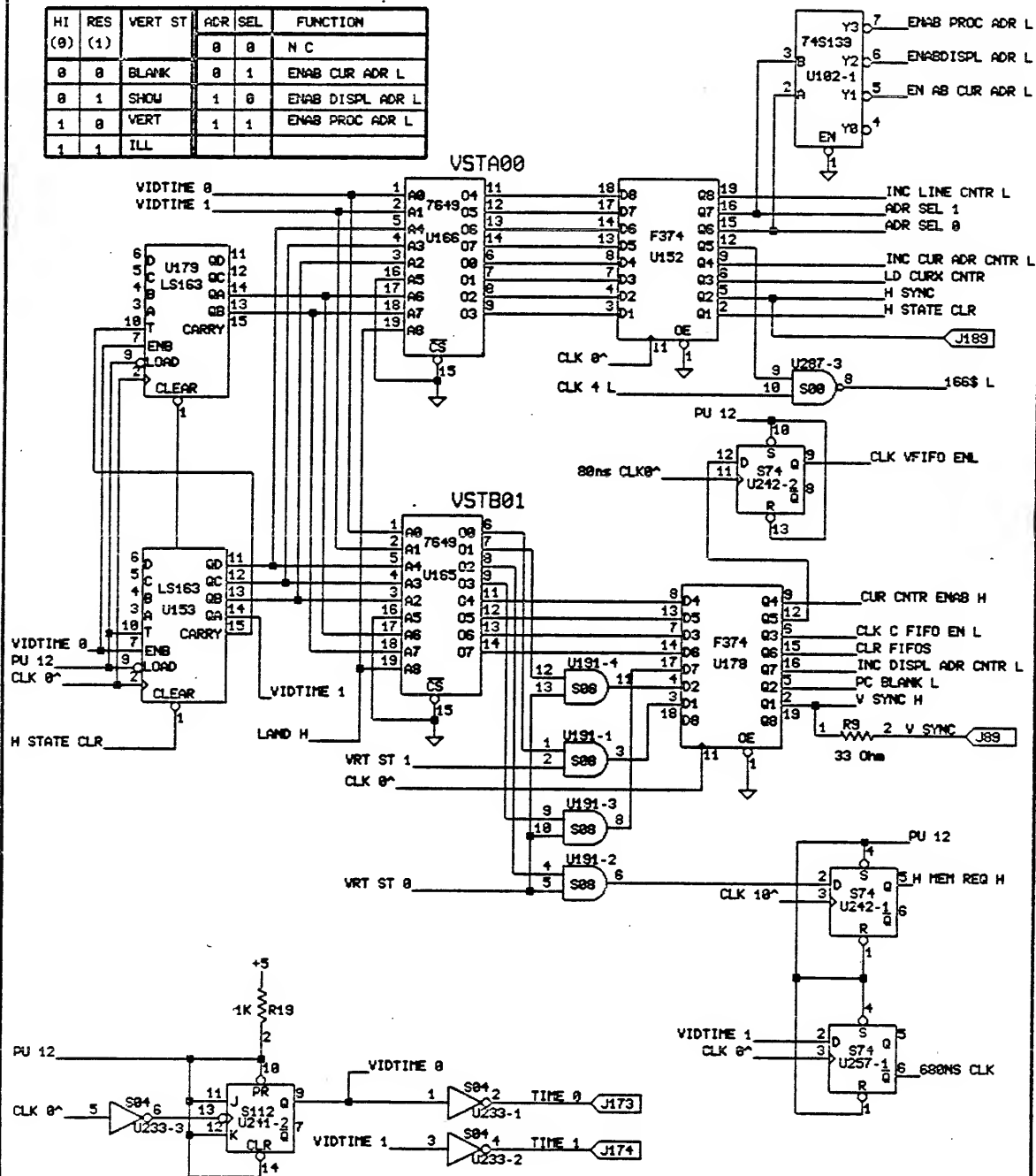
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TITLE  
CLOCK GENERATION  
LPM21

DESIGNED	RUSS SCHMER	SIZE	CODE	IDENTIFICATION	VAR	REV
DRAWN	27 DEC 84	STECK	A	1 1	0 2 4 5 -	0 2 A
UPDATED			PROJ :	2 MEGABYTE LANDSCAPE MEMORY u/256k		PAGE 21 OF 27

PERQ

H1	RES	VERT ST	ADR	SEL	FUNCTION
(0)	(1)		0	0	N C
0	0	BLANK	0	1	ENAB CUR ADR L
0	1	SHOW	1	0	ENAB DISPL ADR L
1	0	VERT	1	1	ENAB PROC ADR L
1	1	ILL			



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**TITLE**

HORIZONTAL STATE

LMEY22

PERO

DESIGNED	RUSS SCHUER	
DRAWN	27 DEC 84	STE
UPDATED		

SIZE  
A

CODE  
1 1

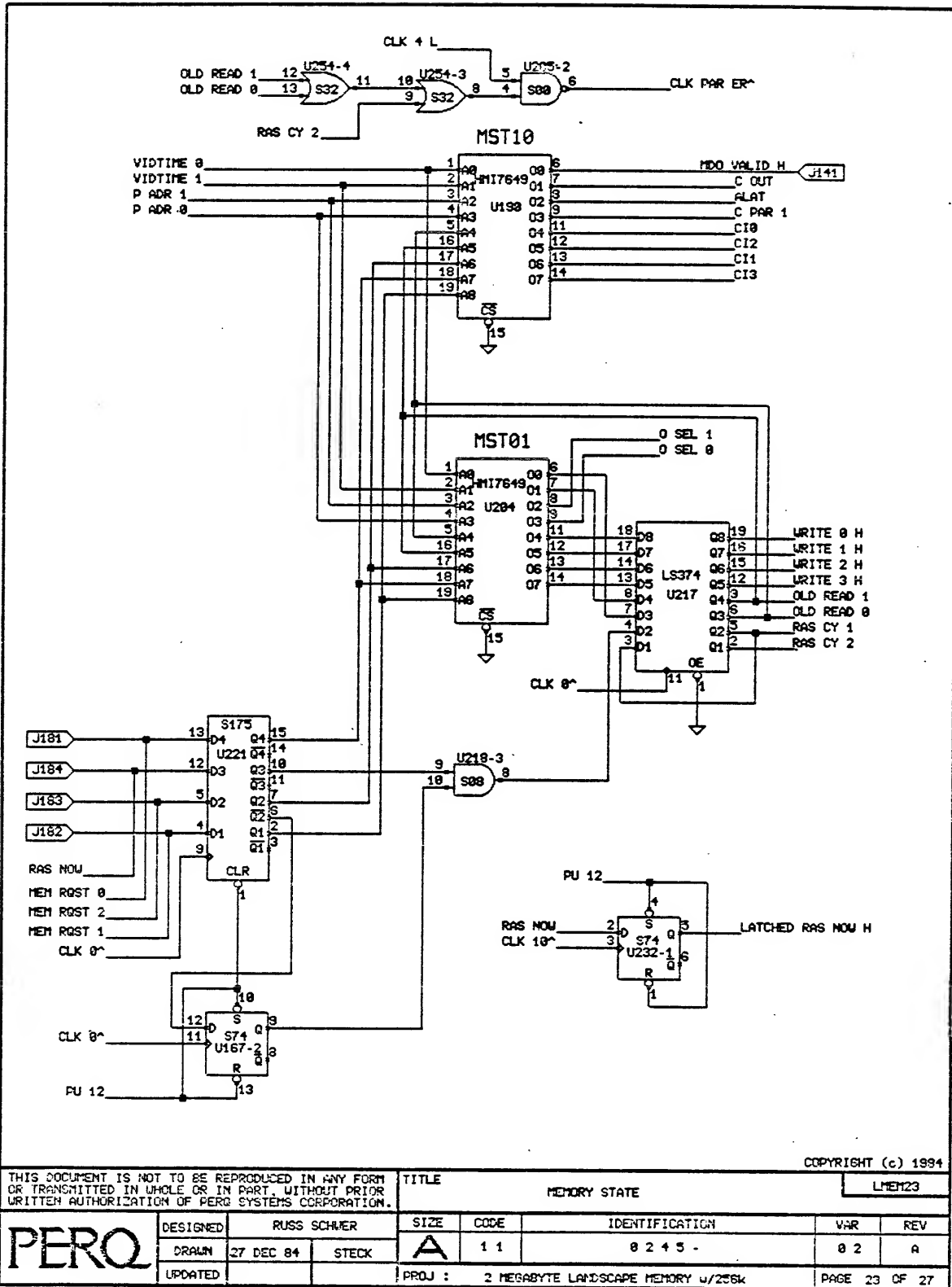
IDENTIFICATION  
0 2 4 5 -

VAR
0 2

REV  
A

PROJ : 2 MEGABYTE LANDSCAPE MEMORY W/256k

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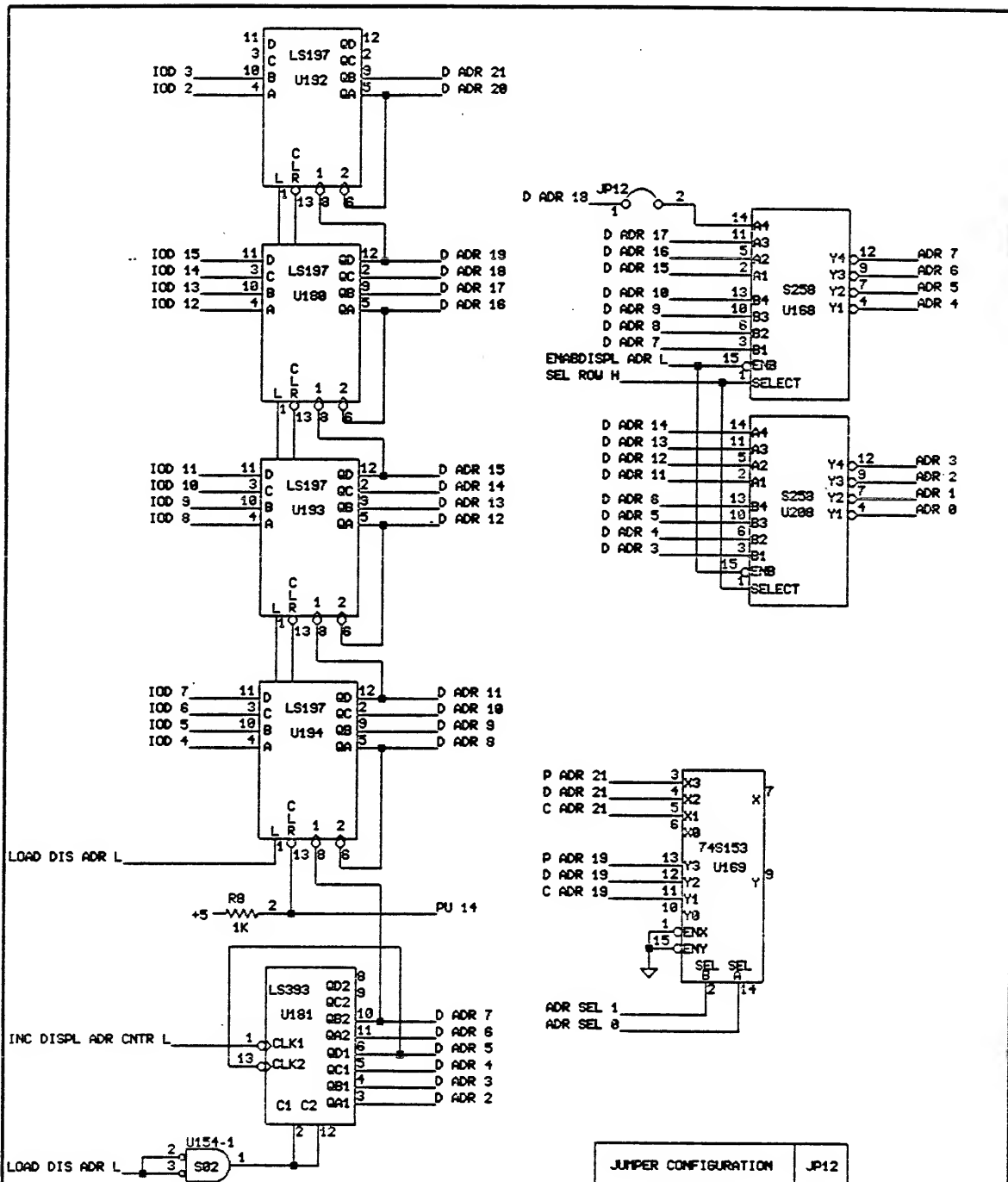
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TITLE  
MEMORY STATE  
LH23

DESIGNED	RUSS SCHWER	SIZE	CODE	IDENTIFICATION	VAR	REV
DRAWN	27 DEC 84	STECK	A	0 2 4 5 -	0 2	A
UPDATED			PROJ :	2 MEGABYTE LANDSCAPE MEMORY u/256k	PAGE 23	OF 27

PERQ





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TITLE

DISPLAY ADDRESS COUNTERS AND MUX

LMEM24

**PERQ**

DESIGNED	RUSS SCHUER
DRAWN	27 DEC 84
UPDATED	

SIZE

CODE

IDENTIFICATION

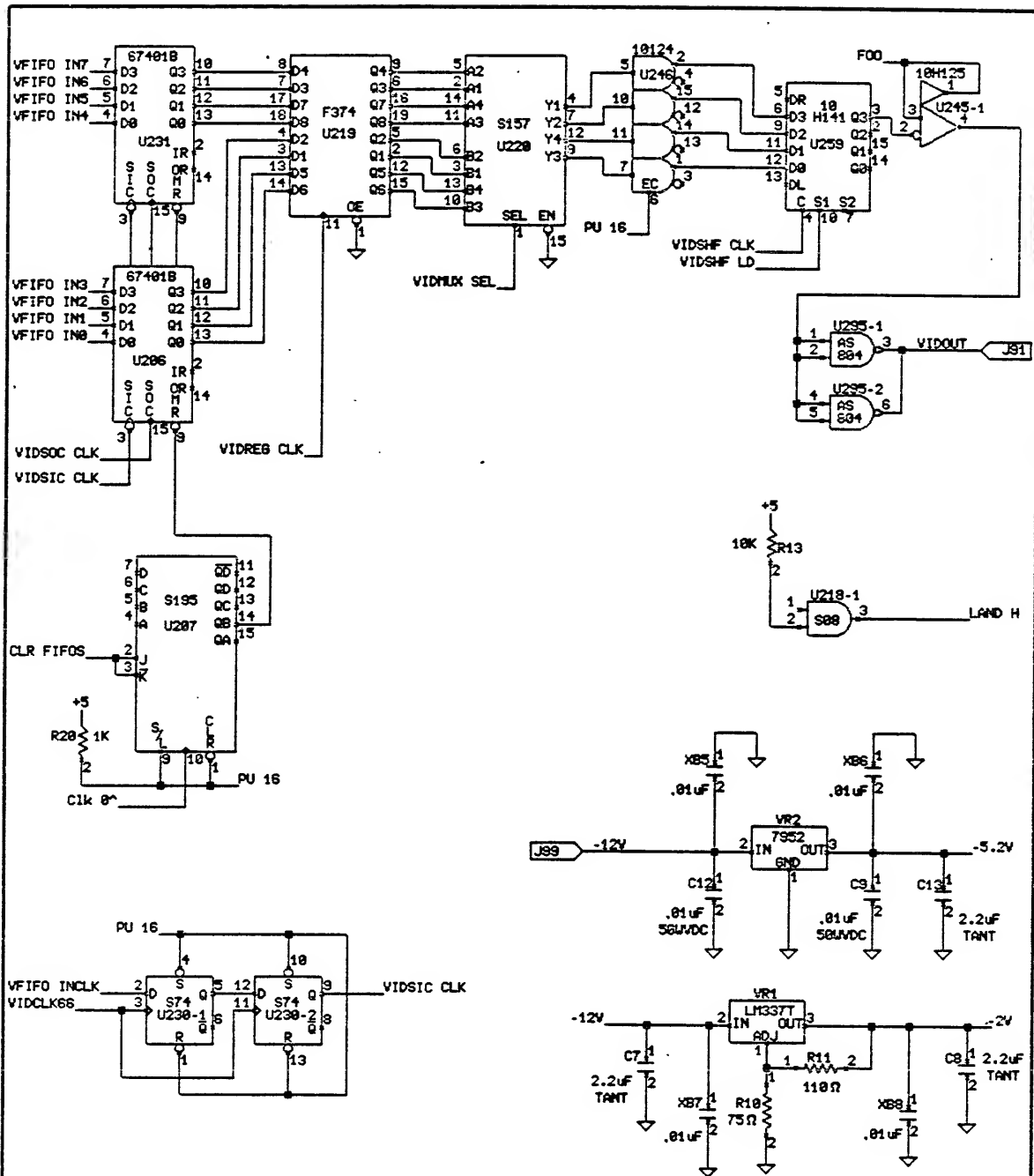
VRR

REV

PROJ :

2 MEGABYTE LANDSCAPE MEMORY w/256k

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TITLE VIDEO OUT DATA PATH - -5.2V and -2V REGULATORS

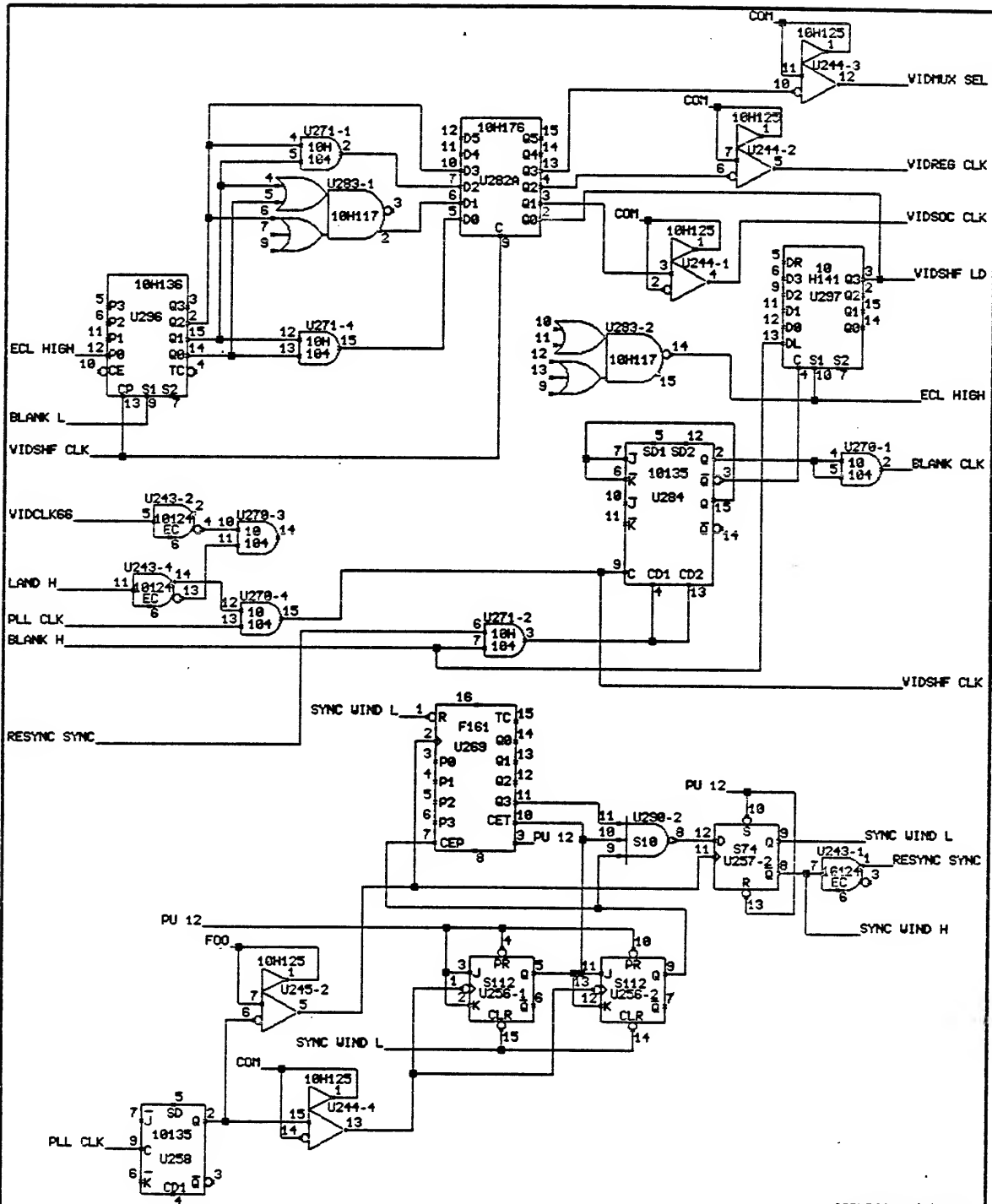
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LMH25

DESIGNED	RUSS SCHUER	SIZE	CODE	IDENTIFICATION	VAR	REV
DRAWN	27 DEC 84	STECK	A	0 2 4 5 -	0 2	A
UPDATED			PROJ :	2 MEGABYTE LANDSCAPE MEMORY u/256k	PAGE 25 OF 27	

PERQ





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TITLE VIDEO CLOCK SYNC AND VIDEO OUT CONTROL

LHM27

DESIGNED	RUSS SCHUER	SIZE	CODE	IDENTIFICATION	VAR	REV
DRAWN	27 DEC 84	STECK	A	1 1	0 2 4 5 -	0 2 E
UPDATED	16 Jan 85	STECK	PROJ :	2 MEGABYTE LANDSCAPE MEMORY u/256k	PAGE 27 OF 27	

PERQ

Part/Page Cross Reference

16 Jan 85 17:59:42

Using Files: LMEM01.WL to LMEM27.WL

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U3...	MEMCHIP	15				
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U12...	74S51	4	1			
U13...	74S280	1				
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U24...	74S08	1	1	1	1	
U25...	74S280	1				
U26...	74S241	2				
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U37...	74S74	1	1			
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U44...	MEMCHIP	16				
U46...	MEMCHIP	17				
U48...	74S374	3				
U49...	74F374	5				
U50...	74F374	5				
U51...	74S280	4				
U52...	74S280	4				
U53...	MEMCHIP	14				
U55...	MEMCHIP	15				
U57...	MEMCHIP	16				
U59...	MEMCHIP	17				
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WO OUT<7>.....	14	7	5		
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WO OUT<9>.....	14	8	5		
WO PAR IN.....	14	1			
WO PAR OUT.....	14	4			
WO WRITE A L.....	14	14	13		
W1 CAS OA L.....	15	15	14	14	13
W1 CAS 1A L.....	15	15	14	14	13
W1 IN<0>.....	15	2			
W1 IN<10>.....	15	2			
W1 IN<11>.....	15	2			
W1 IN<12>.....	15	2			
W1 IN<13>.....	15	2			
W1 IN<14>.....	15	2			
W1 IN<15>.....	15	2			
W1 IN<1>.....	15	2			
W1 IN<2>.....	15	2			
W1 IN<3>.....	15	2			
W1 IN<4>.....	15	2			
W1 IN<5>.....	15	2			

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W2 OUT<6>.....	16	7	6
W2 OUT<7>.....	16	7	6
W2 OUT<8>.....	16	8	6
W2 OUT<9>.....	16	8	6
W2 PAR IN.....	16	1	
W2 PAR OUT.....	16	4	
W2 WRITE A L.....	16	16	13
W3 A0 A L.....	17	17	16 16 13
W3 A1 A L.....	17	17	16 16 13
W3 A2 A L.....	17	17	16 16 13
W3 A3 A L.....	17	17	16 16 13
W3 A4 A L.....	17	17	16 16 13
W3 A5 A L.....	17	17	16 16 13
W3 A6 A L.....	17	17	16 16 13
W3 A7 A L.....	17	17	16 16 13
W3 A8 A L.....	17	17	16 16 13
W3 CAS 0A L.....	17	17	16 16 13
W3 CAS 1A L.....	17	17	16 16 13
W3 IN<0>.....	17	3	
W3 IN<10>.....	17	3	
W3 IN<11>.....	17	3	
W3 IN<12>.....	17	3	
W3 IN<13>.....	17	3	
W3 IN<14>.....	17	3	
W3 IN<15>.....	17	3	
W3 IN<1>.....	17	3	
W3 IN<2>.....	17	3	
W3 IN<3>.....	17	3	
W3 IN<4>.....	17	3	
W3 IN<5>.....	17	3	
W3 IN<6>.....	17	3	
W3 IN<7>.....	17	3	
W3 IN<8>.....	17	3	
W3 IN<9>.....	17	3	
W3 OUT<0>.....	17	8	6
W3 OUT<10>.....	17	8	6
W3 OUT<11>.....	17	8	6
W3 OUT<12>.....	17	7	6
W3 OUT<13>.....	17	7	6
W3 OUT<14>.....	17	7	6
W3 OUT<15>.....	17	7	6
W3 OUT<1>.....	17	8	6
W3 OUT<2>.....	17	8	6
W3 OUT<3>.....	17	8	6
W3 OUT<4>.....	17	7	6
W3 OUT<5>.....	17	7	6
W3 OUT<6>.....	17	7	6
W3 OUT<7>.....	17	7	6
W3 OUT<8>.....	17	8	6
W3 OUT<9>.....	17	8	6
W3 PAR IN.....	17	1	
W3 PAR OUT.....	17	4	

W3 RAS A L.....17 17 17 17 16 16 16 16 13  
W3 WRITE A L.....17 17 13  
WRITE 0 H.....23 13  
WRITE 1 H.....23 13  
WRITE 2 H.....23 13  
WRITE 3 H.....23 13  
WRITE BAD PARITY.....18 1

This Run Was made using the following files:

110245.PART

lmem27.WL  
lmem26.WL  
lmem25.WL  
lmem24.WL  
lmem23.WL  
lmem22.WL  
lmem21.WL  
lmem20.WL  
lmem19.WL  
lmem18.WL  
lmem17.WL  
lmem16.WL  
lmem15.WL  
lmem14.WL  
lmem13.WL  
lmem12.WL  
lmem11.WL  
lmem10.WL  
lmem09.WL  
lmem08.WL  
lmem07.WL  
lmem06.WL  
lmem05.WL  
lmem04.WL  
lmem03.WL  
lmem02.WL  
lmem01.WL

Number Of Nets = 721  
Begin Wirelist

1: U13-1 U22-1 U35-1 U10-1 U36-1 U26-1  
1: U39-1 U23-1 U61-1 U48-1 U9-1 U51-1  
1: U102-15 U87-1 U87-15 U255-6 U280-6  
1: U281-6 U268-6 U279-6 U267-6 U294-6  
1: U293-6 U291-17 U291-5 U291-8 U266-8  
1: U278-8 U291-10 U266-10 U278-10 U292-1  
1: U253-1 U265-1 U252-9 U277-9 U115-7  
1: U90-1 U64-1 U77-1 U88-1 U88-15 U142-1  
1: U239-19 U239-1 U229-1 U227-19 U227-1  
1: U228-19 U225-1 U225-19 U234-1 U222-1  
1: U222-19 U223-1 U223-19 U224-19 U155-1  
1: U116-1 XD2-2 U166-16 U102-1 U178-1  
1: U152-1 U165-16 U165-15 U166-15 U204-15  
1: U217-1 U190-15 U169-1 U169-15 XB5-1  
1: R10-2 VR2-1 C9-2 U220-15 U219-1 C13-2  
1: C8-2 C7-2 XB8-2 XB7-2 C12-2 XB6-1  
1: XB2-1 C10-2 C14-2 C1-2 C2-2 U195-1



1: R15-2 POT1-3 C15-2 C11-2 XB4-2 XB1-2	
1: XB3-1 VR3-1 U195-14	.!GND
2: U244-3 282A-3	.%282A-3
3: U251-6 290A-11	.%290A-11
4: U195-10 L1-1 C10-1	.%C10-1
5: C4-2 R2-2 C3-2	.%C3-2
6: U195-12 L1-2 D1-1	.%D1-1
7: R5-2 C5-1 D1-2	.%D1-2
8: THM1-1 J79-1	.%J79-1
9: U86-14 JP2-2	.%JP2-2
10: U115-12 JP5-2 JP3-2	.%JP3-2
11: JP7-2 U115-1 JP4-2	.%JP4-2
12: U115-14 JP10-2 JP9-2	.%JP9-2
13: R10-1 VR1-1 R11-1	.%R11-1
14: POT1-2 R4-1	.%R4-1
15: U130-8 C4-1 R7-2 R5-1	.%R5-1
16: U116-6 U101-3	.%U101-3
17: U116-2 U101-5	.%U101-5
18: U116-19 U101-6	.%U101-6
19: U127-15 U101-7	.%U101-7
20: U103-5 U103-6	.%U103-6
21: U129-12 U103-8	.%U103-8
22: U24-8 U11-11	.%U11-11
23: U12-8 U11-12 U37-2 U37-12 U11-2	.%U11-2
24: U24-6 U11-3	.%U11-3
25: U114-12 U154-4 U114-2	.%U114-2
26: U101-4 U116-5	.%U116-5

27: U13-6 U12-1	.%U12-1
28: U13-5 U12-10	.%U12-10
29: U25-6 U12-9	.%U12-9
30: U205-2 U127-11	.%U127-11
31: U116-15 U127-3	.%U127-3
32: U116-16 U127-4	.%U127-4
33: U116-12 U127-5	.%U127-5
34: U116-9 U127-6	.%U127-6
35: U129-6 U129-5	.%U129-5
36: R4-2 R3-2 U130-5 U130-10	.%U130-10
37: U130-4 U130-13	.%U130-13
38: U130-11 U130-2	.%U130-2
39: R3-1 C3-1 R2-1 U130-9	.%U130-9
40: U154-10 U139-11	.%U139-11
41: U155-19 U140-11	.%U140-11
42: U155-16 U140-13	.%U140-13
43: U155-15 U140-14	.%U140-14
44: U167-4 U140-2	.%U140-2
45: U155-12 U140-3	.%U140-3
46: U155-9 U140-4	.%U140-4
47: U155-2 U140-6	.%U140-6
48: JP8-2 U141-14	.%U141-14
49: U287-9 U152-12	.%U152-12
50: U179-10 U153-15	.%U153-15
51: U178-8 U165-11	.%U165-11
52: U178-13 U165-12	.%U165-12

53: U178-7 U165-13	.%U165-13
54: U178-14 U165-14	.%U165-14
55: U191-1 U165-6	.%U165-6
56: U191-4 U165-8	.%U165-8
57: U152-18 U166-11	.%U166-11
58: U152-17 U166-12	.%U166-12
59: U152-14 U166-13	.%U166-13
60: U152-13 U166-14	.%U166-14
61: U165-17 U179-14 U166-17	.%U166-17
62: U165-18 U179-13 U166-18	.%U166-18
63: U153-13 U165-3 U166-3	.%U166-3
64: U153-12 U165-4 U166-4	.%U166-4
65: U153-11 U165-5 U166-5	.%U166-5
66: U152-8 U166-6	.%U166-6
67: U152-7 U166-7	.%U166-7
68: U152-4 U166-8	.%U166-8
69: U152-3 U166-9	.%U166-9
70: U205-3 U248-13 U167-2	.%U167-2
71: JP12-2 U168-14	.%U168-14
72: U154-1 U181-12 U181-2	.%U181-2
73: U178-4 U191-11	.%U191-11
74: U165-7 U191-12	.%U191-12
75: U178-3 U191-3	.%U191-3
76: U242-2 U191-6	.%U191-6
77: U178-17 U191-8	.%U191-8
78: U165-9 U191-9	.%U191-9

79: C17-1 R15-1 U195-5	.%U195-5
80: U221-7 U190-17 U204-17	.%U204-17
81: U221-15 U190-18 U204-18	.%U204-18
82: U221-2 U190-19 U204-19	.%U204-19
83: U217-8 U204-7	.%U204-7
84: U101-15 U205-1	.%U205-1
85: U143-6 U205-8	.%U205-8
86: U205-10 U139-8 U205-9	.%U205-9
87: U219-4 U206-10	.%U206-10
88: U219-3 U206-11	.%U206-11
89: U219-13 U206-12	.%U206-12
90: U219-14 U206-13	.%U206-13
91: U204-14 U217-13	.%U217-13
92: U204-13 U217-14	.%U217-14
93: U204-12 U217-17	.%U217-17
94: U204-11 U217-18	.%U217-18
95: U218-8 U217-4	.%U217-4
96: U204-6 U217-7	.%U217-7
97: U167-9 U218-10	.%U218-10
98: R13-2 U218-2	.%U218-2
99: U221-10 U218-9	.%U218-9
100: U220-13 U219-12	.%U219-12
101: U220-14 U219-16	.%U219-16
102: U231-12 U219-17	.%U219-17
103: U231-13 U219-18	.%U219-18
104: U220-11 U219-19	.%U219-19

105: U220-3 U219-2	.%U219-2
106: U220-6 U219-5	.%U219-5
107: U220-2 U219-6	.%U219-6
108: U231-11 U219-7	.%U219-7
109: U231-10 U219-8	.%U219-8
110: U220-5 U219-9	.%U219-9
111: U219-15 U220-10	.%U220-10
112: U246-10 U220-7	.%U220-7
113: U246-7 U220-9	.%U220-9
114: U167-12 U221-6	.%U221-6
115: U230-12 U230-5	.%U230-5
116: U207-14 U206-9 U231-9	.%U231-9
117: U233-6 U241-13	.%U241-13
118: U178-12 U242-12	.%U242-12
119: U270-12 U243-14	.%U243-14
120: U282-10 U243-15	.%U243-15
121: 282A-13 U244-10	.%U244-10
122: U256-13 U256-1 U244-13	.%U244-13
123: U245-6 U258-2 U244-15	.%U244-15
124: 282A-4 U244-6	.%U244-6
125: U220-12 U246-11	.%U246-11
126: U259-11 U246-14	.%U246-14
127: U259-9 U246-15	.%U246-15
128: U259-6 U246-2	.%U246-2
129: U220-4 U246-5	.%U246-5
130: U233-8 U247-1	.%U247-1

131: U249-3 U247-3	.%U247-3
132: U251-3 U247-6	.%U247-6
133: 290A-9 U249-6	.%U249-6
134: U12-13 U25-5	.%U25-5
135: U265-13 U252-12	.%U252-12
136: U265-14 U252-13	.%U252-13
137: U265-3 U252-14	.%U252-14
138: U265-4 U252-15	.%U252-15
139: U254-11 U254-10	.%U254-10
140: U205-4 U254-8	.%U254-8
141: U246-1 U259-12	.%U259-12
142: U245-2 U259-3	.%U259-3
143: U260-11 U260-10	.%U260-10
144: U262-7 U285-10 U261-12	.%U261-12
145: U286-4 U261-6	.%U261-6
146: U286-3 U262-6	.%U262-6
147: U261-11 U262-9	.%U262-9
148: U238-11 U264-11	.%U264-11
149: U238-8 U264-12	.%U264-12
150: U260-9 U264-7	.%U264-7
151: U290-11 U269-11	.%U269-11
152: U245-5 U257-11 U269-2	.%U269-2
153: U243-4 U270-10	.%U270-10
154: U243-13 U270-11	.%U270-11
155: U284-2 U270-4 U270-5	.%U270-5
156: 282A-5 U271-15	.%U271-15

157: 282A-7 U271-2 .%U271-2  
158: U283-6 282A-10 U296-2 U271-4 .%U271-4  
159: U296-15 U271-12 U283-4 U271-5 .%U271-5  
160: U249-2 U251-2 U273-2 U251-7 U273-1  
160: .%U273-1  
161: U251-12 U273-8 .%U273-8  
162: U274-9 U262-11 U274-12 .%U274-12  
163: U286-11 U275-6 .%U275-6  
164: U273-11 U276-2 U276-12 .%U276-12  
165: U285-12 U276-3 .%U276-3  
166: 290A-1 U276-6 .%U276-6  
167: 290A-3 U276-7 .%U276-7  
168: U265-18 U277-11 .%U277-11  
169: U265-17 U277-12 .%U277-12  
170: U265-8 U277-13 .%U277-13  
171: U265-7 U277-14 .%U277-14  
172: U252-19 U252-1 U254-3 U277-1 U277-19  
172: .%U277-19  
173: 282A-6 U283-2 .%U283-2  
174: U296-14 U271-13 U283-5 .%U283-5  
175: U297-4 U284-3 .%U284-3  
176: U271-3 U284-13 U284-4 .%U284-4  
177: U284-15 U284-6 U284-7 .%U284-7  
178: U262-12 U274-7 U285-11 .%U285-11  
179: U285-3 U238-3 U285-13 .%U285-13  
180: U276-11 U285-6 .%U285-6  
181: U261-7 U285-9 .%U285-9

182: U263-6 U286-12	.%U286-12
183: U274-6 U286-1 U286-2	.%U286-2
184: U250-6 U286-5	.%U286-5
185: U250-7 U286-6	.%U286-6
186: U288-6 U287-1 U287-2	.%U287-2
187: U285-5 U287-6	.%U287-6
188: XC1-1 U288-14 XC2-1 XC3-1 U288-3	
188:	.%U288-3
*** Run has multiple outputs	
189: U288-16 U289-8 U288-2 U288-5	.%U288-5
190: U256-9 U290-9 U269-7 U269-10 U256-11	
190: U256-5 U256-12 U290-10	.%U290-10
*** Run has multiple outputs	
191: U257-12 U290-8	.%U290-8
192: U245-4 U295-4 U295-5 U295-2 U295-1	
192:	.%U295-1
193: U24-11 U37-11	.%U37-11
194: U24-3 U37-3	.%U37-3
195: U38-10 U139-3 U248-9 U38-8	.%U38-8
196: U87-7 U51-4	.%U51-4
197: U87-5 U73-10	.%U73-10
198: U64-11 U90-11 U205-11 U77-11	.%U77-11
199: U73-2 U87-3	.%U87-3
200: U73-15 U87-4	.%U87-4
201: U73-7 U87-6	.%U87-6
202: XB2-2 VR3-2 XR3-2 XB3-2	.%XB3-2
203: XL1-1 XD1-1	.%XD1-1
204: XD2-1 XD1-2	.%XD1-2



205: R7-1 POT1-1 U130-14 C1-1 C2-1 .+5V  
 206: XB5-2 C12-1 J99-1 VR2-2 VR1-2 XB7-1  
 206: C7-1 XR3-1 .-12V  
 207: XB8-1 VR1-3 C8-1 R11-2 .-2V  
 208: XB6-2 VR2-3 C13-1 C9-1 .-5.2V  
 209: U268-15 U281-15 U280-15 U255-15 U293-15  
 209: U279-15 U267-15 U294-15 U287-8 .166\$ L  
 210: U257-6 U130-1 .680NS CLK  
 211: U254-4 U292-11 U253-11 U254-2 U248-12  
 211: U167-3 U127-2 U101-2 R17-1 U260-8  
 211: U242-11 .80NS CLK0^  
 212: U99-4 U125-4 U222-15 U229-6 U208-4  
 212: .ADR 0  
 213: U99-7 U125-7 U239-17 U229-4 U208-7  
 213: .ADR 1  
 214: U99-9 U125-9 U239-15 U229-2 U208-9  
 214: .ADR 2  
 215: U99-12 U125-12 U239-13 U227-17 U208-12  
 215: .ADR 3  
 216: U86-4 U141-4 U239-11 U227-15 U168-4  
 216: .ADR 4  
 217: U86-7 U141-7 U239-8 U227-13 U168-7  
 217: .ADR 5  
 218: U86-9 U141-9 U239-6 U227-11 U168-9  
 218: .ADR 6  
 219: U86-12 U141-12 U239-4 U227-8 U168-12  
 219: .ADR 7  
 220: U115-6 U239-2 U227-6 .ADR 8  
 221: U115-10 U88-14 U152-15 U102-2 U169-14  
 221: .ADR SEL 0  
 222: U115-9 U88-2 U152-16 U102-3 U169-2  
 222: .ADR SEL 1  
 223: U205-13 U190-8 .ALAT

224: R25-2 U287-4 U287-5 U285-1	.BANK H
225: U282-9 U270-2	.BLANK CLK
226: U282-14 U271-7 U297-13	.BLANK H
227: U282-15 U296-9	.BLANK L
228: U22-17 U26-3 U10-17 U9-4 U23-4	.BUF MDI 00
229: U36-17 U39-3 U35-17 U61-17 U48-17	
229:	.BUF MDI 01
230: U22-13 U26-5 U10-13 U9-8 U23-8	.BUF MDI 02
231: U36-13 U39-5 U35-13 U61-13 U48-13	
231:	.BUF MDI 03
232: U22-7 U26-7 U10-7 U9-14 U23-14	.BUF MDI 04
233: U36-7 U39-7 U35-7 U61-7 U48-7	.BUF MDI 05
234: U22-3 U26-9 U10-3 U9-18 U23-18	.BUF MDI 06
235: U36-3 U39-9 U35-3 U48-3 U61-3	.BUF MDI 07
236: U22-18 U26-18 U10-18 U23-3 U9-3	.BUF MDI 08
237: U36-18 U39-18 U35-18 U61-18 U48-18	
237:	.BUF MDI 09
238: U22-14 U26-16 U10-14 U9-7 U23-7	.BUF MDI 10
239: U36-14 U39-16 U35-14 U61-14 U48-14	
239:	.BUF MDI 11
240: U22-8 U26-14 U10-8 U9-13 U23-13	.BUF MDI 12
241: U36-8 U39-14 U35-8 U61-8 U48-8	.BUF MDI 13
242: U22-4 U26-12 U10-4 U9-17 U23-17	.BUF MDI 14
243: U36-4 U39-12 U35-4 U61-4 U48-4	.BUF MDI 15
244: U141-13 U128-2	.C ADR 10
245: U125-2 U128-12	.C ADR 11
246: U125-5 U142-23	.C ADR 12
247: U125-11 U142-22	.C ADR 13

248: U125-14 U142-21	.C ADR 14
249: U141-2 U142-20	.C ADR 15
250: U141-5 U142-19	.C ADR 16
251: U141-11 U142-18	.C ADR 17
252: JP8-1 U142-17	.C ADR 18
253: U115-2 U142-16 U169-11	.C ADR 19
254: JP4-1 U114-3 U88-5	.C ADR 2
255: JP7-1 U142-15	.C ADR 20
256: U142-14 U169-5	.C ADR 21
257: U125-3 U114-4	.C ADR 3
258: U125-6 U114-5	.C ADR 4
259: U125-10 U114-6 U114-13	.C ADR 5
260: U125-13 U114-11	.C ADR 6
261: U141-3 U114-10 U128-8	.C ADR 7
262: U141-6 U128-5 U128-6	.C ADR 8
263: U141-10 U128-9	.C ADR 9
264: U154-12 U190-7	.C OUT
265: U139-4 U190-9	.C PAR 1
266: U225-6 U222-11 U223-15 290A-8	.CAS 0 H
267: U225-15 U224-15 290A-10	.CAS 1 H
268: U75-1 U190-11	.CI0
269: U75-12 U190-13	.CI1
270: U75-4 U190-12	.CI2
271: U75-9 U190-14	.CI3
272: U24-12 U24-13 U75-3 U22-11 U35-11	
272:	.CIX 0
273: U24-1 U24-2 U75-11 U10-11 U36-11	

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273:                                     .CIX 1
274: U24-9 U24-10 U75-6 U9-11 U48-11   .CIX 2
275: U24-4 U24-5 U75-8 U23-11 U61-11   .CIX 3
276: U75-2 U75-13 U75-10 U75-5 U248-3
276:                                     .CLK 0 L
277: U143-5 U290-6 U233-5 U178-11 U257-3
277: U179-2 U153-2 U152-11 U221-9 U217-11
277: U167-11 U207-10                     .CLK 0^
278: U205-12 U260-4 U260-5 U260-1 U264-5
278: U260-2                             .CLK 10 L
279: U154-11 U264-6 U242-3 U232-3       .CLK 10^
280: U139-5 U287-11 U290-3 U248-2 U248-1
280: U290-4 U290-5 U287-10 U205-5       .CLK 4 L
281: U287-12 U260-6 J176-1 U287-13 U260-3
281:                                     .CLK 7
*** Run has multiple outputs
282: U254-1 U178-6                       .CLK C FIFO EN L
283: U73-9 U154-13 U74-11 U49-11 U62-11
283: U50-11 U126-11 U113-11 U100-11 U112-11
283:                                     .CLK OUT X
284: U139-6 U89-11 U63-11 U76-11        .CLK P ADR
285: U38-11 U205-6                       .CLK PAR ER^
286: U254-5 U242-9                       .CLK VFIFO ENL
287: XC2-2 XC3-2 U274-1 U262-1 U261-1
287: U262-13 U261-13 U274-13 XC1-2 XL1-2
287: U275-1 U263-13 U275-13 U263-1 U250-1
287: U250-13 U276-1 U251-13 U276-13 U251-1
287: U264-13 U264-1 U249-1               .CLK66
288: U252-18 U277-18 U178-15 U207-2 U207-3
288:                                     .CLR FIFOS
289: U244-14 U244-11 U244-1 U244-7 U244-2
289:                                     .COM
290: U143-10 U156-1 U156-19              .CRT SIGS ENB
291: U101-10 U127-7 U178-9              .CUR CNTR ENAB H

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292: U291-6 U265-5	.CUR DATA 0
293: U291-7 U265-6	.CUR DATA 1
294: U266-5 U265-2	.CUR DATA 2
295: U266-6 U265-9	.CUR DATA 3
296: U266-7 U265-15	.CUR DATA 4
297: U278-5 U265-16	.CUR DATA 5
298: U278-6 U265-12	.CUR DATA 6
299: U278-7 U265-19	.CUR DATA 7
300: U278-1 U266-1 U291-1 U167-6	.CUR ENB H
301: U277-16 U265-11 U252-16 U248-11	.CUR FIFO UNLD
302: U168-13 U194-2	.D ADR 10
303: U208-2 U194-12 U193-8	.D ADR 11
304: U208-5 U193-5 U193-6	.D ADR 12
305: U208-11 U193-9	.D ADR 13
306: U208-14 U193-2	.D ADR 14
307: U168-2 U193-12 U180-8	.D ADR 15
308: U168-5 U180-5 U180-6	.D ADR 16
309: U168-11 U180-9	.D ADR 17
310: JP12-1 U180-2	.D ADR 18
311: U115-15 U169-12 U180-12 U192-8	.D ADR 19
312: JP9-1 U88-4 U181-3	.D ADR 2
313: JP10-1 U192-5 U192-6	.D ADR 20
314: U169-4 U192-9	.D ADR 21
315: U208-3 U181-4	.D ADR 3
316: U208-6 U181-5	.D ADR 4
317: U208-10 U181-6 U181-13	.D ADR 5

318: U208-13 U181-11	.D ADR 6
319: U168-3 U181-10 U194-8	.D ADR 7
320: U168-6 U194-5 U194-6	.D ADR 8
321: U168-10 U194-9	.D ADR 9
322: U280-7 U255-7 U281-7 U268-7 U279-7	
322: U267-7 U294-7 U293-7 R17-2	.DERUNG 80NS CLK
323: U274-11 U286-8	.DIV SYNC
324: U283-14 U296-12 U297-10	.ECL HIGH
325: U141-15 U125-15 U102-5	.EN AB CUR ADR L
326: U86-15 U99-15 U102-7	.ENAB PROC ADR L
327: U102-6 U208-15 U168-15	.ENABDISPL ADR L
328: U51-5 U12-4	.EVEN A
329: U52-5 U12-3	.EVEN B
330: U245-3 U245-7 U245-1	.FOO
331: U238-1 U242-5	.H MEM REQ H
332: U152-2 U153-1 U179-1	.H STATE CLR
333: U156-2 J189-1 U152-5	.H SYNC
334: U143-4 J71-1	.I/O B ENAB L
335: U114-1 U152-9	.INC CUR ADR CNTR L
336: U178-16 U181-1	.INC DISPL ADR CNTR
337: U129-8 U140-9 U152-19	.INC LINE CNTR L
338: U248-4 U155-6 U248-10	.INTR EN L
339: U143-1 J69-1	.IOA 0
340: U143-2 J169-1	.IOA 1
341: U143-3 J68-1	.IOA 2
342: U154-8 J168-1	.IOA 3

343: U154-9 J67-1 .IOA 4  
344: U139-10 J167-1 .IOA 5  
345: U139-9 J66-1 .IOA 6  
346: U129-4 U116-14 U89-12 J64-1 U63-15  
346: U156-18 .IOD 0  
347: U129-10 U116-17 U89-15 J164-1 U63-16  
347: U156-16 .IOD 1  
348: U142-4 U155-14 J58-1 U76-15 U193-3  
348: .IOD 10  
349: U142-5 U155-7 J158-1 U76-6 U193-11  
349: .IOD 11  
350: U142-6 U155-4 J57-1 U76-5 U180-4  
350: .IOD 12  
351: U142-7 U155-3 J157-1 U76-2 U180-10  
351: .IOD 13  
352: U142-8 U155-18 J56-1 U76-19 U180-3  
352: .IOD 14  
353: U142-9 U155-17 J156-1 U76-16 U180-11  
353: .IOD 15  
354: U142-10 U129-3 U116-13 U89-16 J63-1  
354: U63-12 U156-14 U192-4 .IOD 2  
355: U142-11 U129-11 U116-8 U89-19 J163-1  
355: U63-9 U192-10 .IOD 3  
356: U128-4 U103-4 U116-7 J62-1 U63-6  
356: U156-3 U194-4 .IOD 4  
357: U128-10 U103-10 U116-4 J162-1 U63-5  
357: U194-10 .IOD 5  
358: U128-3 U103-3 U116-3 J61-1 U63-2  
358: U194-3 .IOD 6  
359: U128-11 U116-18 J161-1 U63-19 U156-5  
359: U194-11 .IOD 7  
360: U142-2 U155-13 J59-1 U76-12 U193-4  
360: .IOD 8  
361: U142-3 U155-8 J159-1 U76-9 U193-10

361: .IOD 9

362: U156-15 U165-19 U166-19 U218-3 U243-11  
362: .LAND H

363: U238-2 U232-5 .LATCHED RAS NOW H

364: U154-6 U154-5 U142-13 U128-1 U143-13  
364: .LD CUR ADR CNT L

365: U101-9 U127-9 U152-6 .LD CURX CNTR

366: U248-6 J84-1 .LINE CNT INT L

367: U103-12 U248-5 U156-17 .LINE CNT OVERFLOW L

368: U116-11 U143-11 .LOAD CURSOR X POS

369: U143-14 U154-3 U154-2 U194-1 U193-1  
369: U180-1 U192-1 .LOAD DIS ADR L

370: U129-1 U103-1 U143-15 .LOAD LINE CNTR L

371: U155-11 U143-12 .LOAD VIDEO STATE

372: R21-2 J186-1 U156-6 .LOOPTHRU

373: U90-7 J37-1 .MADR 0

374: U90-8 J137-1 .MADR 1

375: U64-13 J31-1 .MADR 10

376: U64-14 J131-1 .MADR 11

377: U64-17 J29-1 .MADR 12

378: U64-18 J129-1 .MADR 13

379: U77-3 J28-1 .MADR 14

380: U77-4 J128-1 .MADR 15

381: U77-7 J27-1 .MADR 16

382: U77-8 J127-1 .MADR 17

383: U77-13 J26-1 .MADR 18

384: U77-14 J126-1 .MADR 19

385: U90-13 J36-1 .MADR 2



386: U77-17 J38-1	.MADR 20
387: U77-18 J138-1	.MADR 21
388: U90-14 J136-1	.MADR 3
389: U90-17 J34-1	.MADR 4
390: U90-18 J134-1	.MADR 5
391: U64-3 J33-1	.MADR 6
392: U64-4 J133-1	.MADR 7
393: U64-7 J32-1	.MADR 8
394: U64-8 J132-1	.MADR 9
395: U278-4 U291-4 U266-4 U140-7	.MAP 0
396: U278-3 U291-3 U266-3 U140-10	.MAP 1
397: U278-2 U291-2 U266-2 U140-12	.MAP 2
398: U291-12 U292-3	.MAP OUT 0
399: U291-11 U292-4	.MAP OUT 1
400: U266-13 U292-7	.MAP OUT 2
401: U266-12 U292-8	.MAP OUT 3
402: U266-11 U292-13	.MAP OUT 4
403: U278-13 U292-14	.MAP OUT 5
404: U278-12 U292-17	.MAP OUT 6
405: U278-11 U292-18	.MAP OUT 7
406: U13-13 J14-1 U26-17	.MDI 00
407: U25-4 J114-1 U39-17	.MDI 01
408: U25-8 J13-1 U26-15	.MDI 02
409: U25-11 J113-1 U39-15	.MDI 03
410: U13-12 J12-1 U26-13	.MDI 04
411: U13-2 J112-1 U39-13	.MDI 05

412: U13-11 J11-1 U26-11	.MDI 06
413: U25-2 J111-1 U39-11	.MDI 07
414: U13-10 J9-1 U26-2	.MDI 08
415: U25-10 J109-1 U39-2	.MDI 09
416: U25-9 J8-1 U26-4	.MDI 10
417: U13-4 J108-1 U39-4	.MDI 11
418: U13-9 J7-1 U26-6	.MDI 12
419: U25-12 J107-1 U39-6	.MDI 13
420: U13-8 J6-1 U26-8	.MDI 14
421: U25-13 J106-1 U39-8	.MDI 15
422: U52-2 U49-2 U50-2 U113-2 U100-2 J24-1	
422:	.MDO 0
423: U51-2 U62-2 U74-2 U126-2 U112-2 J124-1	
423:	.MDO 1
424: U52-10 U49-9 U50-9 U113-9 U100-9	
424: J18-1	.MDO 10
425: U51-10 U62-9 U74-9 U126-9 U112-9	
425: J118-1	.MDO 11
426: U52-9 U49-16 U50-16 U113-16 U100-16	
426: J17-1	.MDO 12
427: U51-9 U62-16 U74-16 U126-16 U112-16	
427: J117-1	.MDO 13
428: U52-8 U49-12 U50-12 U113-12 U100-12	
428: J16-1	.MDO 14
429: U51-8 U62-12 U74-12 U126-12 U112-12	
429: J116-1	.MDO 15
430: U52-1 U49-6 U50-6 U113-6 U100-6 J23-1	
430:	.MDO 2
431: U51-13 U62-6 U74-6 U126-6 U112-6	
431: J123-1	.MDO 3
432: U52-13 U49-19 U50-19 U113-19 U100-19	

432: J22-1	.MDO 4
433: U51-12 U62-19 U74-19 U126-19 U112-19	
433: J122-1	.MDO 5
434: U52-12 U49-15 U50-15 U113-15 U100-15	
434: J21-1	.MDO 6
435: U52-4 U62-15 U74-15 U126-15 U112-15	
435: J121-1	.MDO 7
436: U52-11 U49-5 U50-5 U113-5 U100-5	
436: J19-1	.MDO 8
437: U51-11 U62-5 U74-5 U126-5 U112-5	
437: J119-1	.MDO 9
438: U190-6 J141-1	.MDO VALID H
439: J181-1 U221-13	.MEM RQST 0
440: J182-1 U221-4	.MEM RQST 1
441: J183-1 U221-5	.MEM RQST 2
442: U293-13 U253-3	.MEMSHIFT 0
443: U294-13 U253-4	.MEMSHIFT 1
444: U279-13 U253-7	.MEMSHIFT 2
445: U267-13 U253-8	.MEMSHIFT 3
446: U268-13 U253-13	.MEMSHIFT 4
447: U281-13 U253-14	.MEMSHIFT 5
448: U255-13 U253-17	.MEMSHIFT 6
449: U280-13 U253-18	.MEMSHIFT 7
450: U291-16 U253-2 U252-4	.MSP0
451: U291-15 U253-5 U277-5	.MSP1
452: U266-17 U253-6 U252-5	.MSP2
453: U266-16 U253-9 U277-6	.MSP3
454: U266-15 U253-12 U252-6	.MSP4
455: U278-17 U253-15 U277-7	.MSP5

456: U278-16 U253-16 U252-7	.MSP6
457: U278-15 U253-19 U277-8	.MSP7
458: U102-14 U87-14 U204-9	.O SEL 0
459: U102-13 U87-2 U204-8	.O SEL 1
460: U51-6 U12-2	.ODD A
461: U52-6 U12-5	.ODD B
462: U254-13 U217-6 U190-5 U204-5	.OLD READ 0
463: U254-12 U217-9 U190-16 U204-16	.OLD READ 1
464: U102-12 U74-1 U50-1	.OUT ENAB W0
465: U102-11 U49-1 U62-1	.OUT ENAB W1
466: U102-10 U100-1 U112-1	.OUT ENAB W2
467: U102-9 U113-1 U126-1	.OUT ENAB W3
468: U90-6 U190-4 U204-4	.P ADR 0
469: U90-9 U190-3 U204-3	.P ADR 1
470: U86-13 U64-12 U76-13	.P ADR 10
471: U99-2 U64-15 U76-8	.P ADR 11
472: U99-5 U64-16 U76-14	.P ADR 12
473: U99-11 U64-19 U76-7	.P ADR 13
474: U99-14 U77-2 U76-4	.P ADR 14
475: U86-2 U77-5 U76-3	.P ADR 15
476: U77-6 U86-5 U76-18	.P ADR 16
477: U86-11 U77-9 U76-17	.P ADR 17
478: JP2-1 U77-12 U89-13	.P ADR 18
479: U115-13 U77-15 U89-14 U169-13	.P ADR 19
480: JP5-1 U90-12 U88-3 U63-14	.P ADR 2
481: JP3-1 U77-16 U89-17	.P ADR 20

482: U77-19 U89-18 U169-3	.P ADR 21
483: U99-3 U90-15 U63-17	.P ADR 3
484: U99-6 U90-16 U63-13	.P ADR 4
485: U99-10 U90-19 U63-8	.P ADR 5
486: U99-13 U64-2 U63-7	.P ADR 6
487: U86-3 U64-5 U63-4	.P ADR 7
488: U86-6 U64-6 U63-3	.P ADR 8
489: U86-10 U64-9 U63-18	.P ADR 9
490: U12-6 U38-12	.PAR ER H
491: U248-8 J83-1	.PAR INTR L
492: U178-5 U243-10	.PC BLANK L
493: U285-8 U261-3	.PH<0>
494: U261-5 U262-3 U261-2 U285-4 U285-2	
494: U238-10	.PH<1>
495: U274-3 U262-5 U262-2	.PH<2>
496: U274-5 U275-3 U274-2 U251-11	.PH<3>
497: U275-2 U263-3 U275-5 U238-12 U260-12	
497: U273-12 U260-13	.PH<4>
498: U263-5 U250-3 U263-2 U247-2 U247-5	
498: U264-3	.PH<5>
499: U250-2 U250-11 U250-5 U238-9	.PH<6>
500: U263-11 U250-9 U250-12	.PH<7>
501: U263-12 U275-11 U263-9	.PH<8>
502: U275-12 U275-9 U273-9 U238-13 U264-2	
502:	.PH<9>
503: U195-3 U258-9 U270-13	.PLL CLK
504: U11-13 U37-4 U37-10 U37-1 U37-13	
504: R1-2 U11-4 U11-1 U11-10	.PU 1

505: U262-10 U274-14 U261-14 U274-10 R22-2  
505: U262-15 U274-4 U261-15 U262-4 U274-15  
505: U261-4 U262-14 U261-10 .PU 10

506: U276-10 U276-15 U249-15 U251-4 R24-2  
506: U276-4 U276-14 U251-10 U249-4 U251-14  
506: U264-10 U264-15 U264-4 U251-15 U264-14  
506: . . .PU 11

507: U167-1 U242-13 U242-10 U241-14 U153-10  
507: U242-4 U257-1 U242-1 U257-4 U179-9  
507: U153-9 U241-11 U241-12 R19-2 U241-10  
507: U232-1 U232-4 U221-1 U167-10 U167-13  
507: U257-13 U256-10 U256-4 U256-3 U256-2  
507: U269-9 U257-10 .PU 12

508: R8-2 U194-13 U193-13 U180-13 U192-13  
508: .PU 14

509: R20-2 U246-6 U230-4 U230-10 U230-1  
509: U230-13 U207-1 U207-9 U243-6 .PU 16

510: R12-2 U39-19 U26-19 U73-1 U268-9  
510: U281-9 U280-9 U255-9 U293-9 U279-9  
510: U267-9 U294-9 .PU 2

511: U128-13 U103-13 U129-13 R6-2 U103-11  
511: U127-10 U140-1 U127-1 U101-1 .PU 5

512: R23-2 U288-15 U288-1 U288-4 U275-4  
512: U275-14 U263-14 U275-10 U263-10 U250-14  
512: U250-10 U250-15 U250-4 U263-15 U263-4  
512: U275-15 .PU 9

513: U225-11 U224-11 290A-2 .RAS 0 H

514: 290A-4 .RAS 1 H  
\*\*\* Only one pin in net

515: U217-5 U217-3 .RAS CY 1

516: U254-9 U217-2 .RAS CY 2

517: U232-2 J184-1 U221-12 .RAS NOW

518: U143-9 U89-1 .READ HI PAR L

519: U143-7 U38-13 U63-1 U76-1 .READ LO PAR L

520: U243-1 U271-6 .RESYNC SYNC

521: U233-9 U247-4 .SEL CAS 0 H

\*\*\* Run Has no outputs

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522: U99-1 U86-1 U115-11 U125-1 U141-1
522: U273-3 U168-1 U208-1          .SEL ROW H

523: U130-3 U257-8 U243-7          .SYNC WIND H

524: U257-9 U256-15 U269-1 U256-14 .SYNC WIND L

525: J78-1 THM1-2                  .TEMP CAGE

526: U233-2 J173-1                 .TIME 0

527: U233-4 J174-1                 .TIME 1

528: J89-1 R9-2                    .V SYNC

529: U156-4 U178-2 R9-1            .V SYNC H

530: XB1-1 VR3-3 XB4-1 C11-1 C5-2 C17-2
530: C15-1 C14-1 U195-7 U195-8     .VEE

531: U292-2 U206-4                 .VFIFO IN0

532: U292-5 U206-5                 .VFIFO IN1

533: U292-6 U206-6                 .VFIFO IN2

534: U292-9 U206-7                 .VFIFO IN3

535: U292-12 U231-4                .VFIFO IN4

536: U292-15 U231-5                .VFIFO IN5

537: U292-16 U231-6                .VFIFO IN6

538: U292-19 U231-7                .VFIFO IN7

539: U254-6 U230-2                 .VFIFO INCLK

540: U287-3 U230-3 U230-11 U243-5  .VIDCLK66

541: U220-1 U244-12                .VIDMUX SEL

542: U295-6 U295-3 J91-1           .VIDOUT

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\*\*\* Run has multiple outputs

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543: U219-11 U244-5                .VIDREG CLK

544: U259-4 282A-9 U296-13 U284-9 U270-15
544:                               .VIDSHF CLK

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545: U259-10 U243-12 282A-2 U297-3      .VIDSHF LD
*** Run has multiple outputs

546: U230-9 U206-3 U231-3                .VIDSIC CLK

547: U231-15 U206-15 U244-4              .VIDSOC CLK
*** Run has multiple outputs

548: U273-10 U273-13 U166-1 U165-1 U179-7
548: U153-7 U233-1 U241-9 U190-1 U204-1
548:                                     .VIDTIME 0

549: U153-14 U233-3 U166-2 U165-2 U257-2
549: U190-2 U204-2                       .VIDTIME 1

550: U140-15 U191-5 U191-13 U191-10      .VRT ST 0

551: U140-5 U191-2                       .VRT ST 1

552: U239-16 U53-5 U65-5 U78-5 U91-5 U196-5
552: U182-5 U170-5 U157-5 U144-5 U131-5
552: U117-5 U104-5 U209-5 U40-5 U27-5
552: U14-5 U1-5 U55-5 U67-5 U80-5 U93-5
552: U198-5 U184-5 U172-5 U159-5 U146-5
552: U133-5 U119-5 U106-5 U211-5 U42-5
552: U29-5 U16-5 U3-5                    .WO A0 A L

553: U239-14 U53-7 U65-7 U78-7 U91-7 U196-7
553: U182-7 U170-7 U157-7 U144-7 U131-7
553: U117-7 U104-7 U209-7 U40-7 U27-7
553: U14-7 U1-7 U55-7 U67-7 U80-7 U93-7
553: U198-7 U184-7 U172-7 U159-7 U146-7
553: U133-7 U119-7 U106-7 U211-7 U42-7
553: U29-7 U16-7 U3-7                    .WO A1 A L

554: U239-12 U53-6 U65-6 U78-6 U91-6 U196-6
554: U182-6 U170-6 U157-6 U144-6 U131-6
554: U117-6 U104-6 U209-6 U40-6 U27-6
554: U14-6 U1-6 U55-6 U67-6 U80-6 U93-6
554: U198-6 U184-6 U172-6 U159-6 U146-6
554: U133-6 U119-6 U106-6 U211-6 U42-6
554: U29-6 U16-6 U3-6                    .WO A2 A L

555: U239-9 U53-14 U65-14 U78-14 U91-14
555: U196-14 U182-14 U170-14 U157-14 U144-14
555: U131-14 U117-14 U104-14 U209-14 U40-14
555: U27-14 U14-14 U1-14 U55-14 U67-14
555: U80-14 U93-14 U198-14 U184-14 U172-14
555: U159-14 U146-14 U133-14 U119-14 U106-14
555: U211-14 U42-14 U29-14 U16-14 U3-14
555:                                     .WO A3 A L

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556: U239-7 U53-13 U65-13 U78-13 U91-13  
556: U196-13 U182-13 U170-13 U157-13 U144-13  
556: U131-13 U117-13 U104-13 U209-13 U40-13  
556: U27-13 U14-13 U1-13 U55-13 U67-13  
556: U80-13 U93-13 U198-13 U184-13 U172-13  
556: U159-13 U146-13 U133-13 U119-13 U106-13  
556: U211-13 U42-13 U29-13 U16-13 U3-13  
556: .WO A4 A L

557: U239-5 U53-12 U65-12 U78-12 U91-12  
557: U196-12 U182-12 U170-12 U157-12 U144-12  
557: U131-12 U117-12 U104-12 U209-12 U40-12  
557: U27-12 U14-12 U1-12 U55-12 U67-12  
557: U80-12 U93-12 U198-12 U184-12 U172-12  
557: U159-12 U146-12 U133-12 U119-12 U106-12  
557: U211-12 U42-12 U29-12 U16-12 U3-12  
557: .WO A5 A L

558: U239-3 U53-15 U65-15 U78-15 U91-15  
558: U196-15 U182-15 U170-15 U157-15 U144-15  
558: U131-15 U117-15 U104-15 U209-15 U40-15  
558: U27-15 U14-15 U1-15 U172-15 U184-15  
558: U198-15 U93-15 U80-15 U67-15 U55-15  
558: U42-15 U29-15 U16-15 U3-15 U159-15  
558: U146-15 U133-15 U119-15 U106-15 U211-15  
558: .WO A6 A L

559: U222-5 U53-11 U65-11 U78-11 U91-11  
559: U196-11 U182-11 U170-11 U157-11 U144-11  
559: U131-11 U117-11 U104-11 U209-11 U40-11  
559: U27-11 U14-11 U1-11 U55-11 U67-11  
559: U80-11 U93-11 U198-11 U184-11 U172-11  
559: U159-11 U146-11 U133-11 U119-11 U106-11  
559: U211-11 U42-11 U29-11 U16-11 U3-11  
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560: U239-18 U53-1 U65-1 U78-1 U91-1 U196-1  
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560: U133-1 U119-1 U106-1 U211-1 U42-1  
560: U29-1 U16-1 U3-1  
560: .WO A8 A L

561: U222-9 .WO CAS OA L  
\*\*\* Only one pin in net

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563: U22-15 U131-2 .WO IN<10>

564: U35-15 U144-2 .WO IN<11>

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566: U35-9 U170-2	.WO IN<13>
567: U22-5 U182-2	.WO IN<14>
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571: U35-12 U40-2	.WO IN<3>
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574: U22-2 U78-2	.WO IN<6>
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576: U22-19 U104-2	.WO IN<8>
577: U35-19 U117-2	.WO IN<9>
578: U50-3 U293-12 U1-16	.WO OUT<0>
579: U50-8 U279-14 U131-16	.WO OUT<10>
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582: U74-17 U281-14 U170-16	.WO OUT<13>
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585: U74-3 U294-12 U14-16	.WO OUT<1>
586: U50-7 U279-12 U27-16	.WO OUT<2>
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588: U50-18 U268-12 U53-16	.WO OUT<4>
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590: U50-14 U255-12 U78-16	.WO OUT<6>

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592: U50-4 U293-14 U104-16 .WO OUT<8>  
593: U74-4 U294-14 U117-16 .WO OUT<9>  
594: U37-9 U209-2 .WO PAR IN  
595: U73-5 U209-16 .WO PAR OUT  
596: U222-18 U1-3 U104-3 U40-3 U144-3  
596: U27-3 U131-3 U14-3 U117-3 U78-3 U182-3  
596: U65-3 U170-3 U53-3 U157-3 U209-3  
596: U91-3 U196-3 .WO WRITE A L  
597: U223-5 U78-10 U65-10 U53-10 U40-10  
597: U27-10 U14-10 U1-10 U91-10 U196-10  
597: U182-10 U170-10 U157-10 U144-10 U131-10  
597: U117-10 U104-10 U209-10 U211-10 U106-10  
597: U119-10 U133-10 U146-10 U159-10 U172-10  
597: U184-10 U198-10 U93-10 U80-10 U67-10  
597: U55-10 U42-10 U29-10 U16-10 U3-10  
597: .W1 CAS OA L  
598: U224-5 U53-17 U65-17 U78-17 U91-17  
598: U196-17 U182-17 U170-17 U157-17 U144-17  
598: U131-17 U117-17 U104-17 U209-17 U40-17  
598: U27-17 U14-17 U1-17 U55-17 U67-17  
598: U80-17 U93-17 U198-17 U184-17 U172-17  
598: U159-17 U146-17 U133-17 U119-17 U106-17  
598: U211-17 U42-17 U29-17 U16-17 U3-17  
598: .W1 CAS 1A L  
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606: U36-16 U16-2 .W1 IN<1>  
607: U10-12 U29-2 .W1 IN<2>

608: U36-12 U42-2	.W1 IN<3>
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610: U36-6 U67-2	.W1 IN<5>
611: U10-2 U80-2	.W1 IN<6>
612: U36-2 U93-2	.W1 IN<7>
613: U10-19 U106-2	.W1 IN<8>
614: U36-19 U119-2	.W1 IN<9>
615: U49-3 U293-10 U3-16	.W1 OUT<0>
616: U49-8 U279-11 U133-16	.W1 OUT<10>
617: U62-8 U267-11 U146-16	.W1 OUT<11>
618: U49-17 U268-11 U159-16	.W1 OUT<12>
619: U62-17 U281-11 U172-16	.W1 OUT<13>
620: U49-13 U255-11 U184-16	.W1 OUT<14>
621: U62-13 U280-11 U198-16	.W1 OUT<15>
622: U62-3 U294-10 U16-16	.W1 OUT<1>
623: U49-7 U279-10 U29-16	.W1 OUT<2>
624: U62-7 U267-10 U42-16	.W1 OUT<3>
625: U49-18 U268-10 U55-16	.W1 OUT<4>
626: U62-18 U281-10 U67-16	.W1 OUT<5>
627: U49-14 U255-10 U80-16	.W1 OUT<6>
628: U62-14 U280-10 U93-16	.W1 OUT<7>
629: U49-4 U293-11 U106-16	.W1 OUT<8>
630: U62-4 U294-11 U119-16	.W1 OUT<9>
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632: U73-12 U211-16	.W1 PAR OUT
633: U224-9 U78-4 U65-4 U53-4 U40-4 U27-4	
633: U14-4 U1-4 U91-4 U196-4 U182-4 U170-4	

633: U157-4 U144-4 U131-4 U117-4 U104-4  
 633: U209-4 U196-9 U182-9 U170-9 U157-9  
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 633: U14-9 U1-9 U55-9 U67-9 U80-9 U93-9  
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 633: U133-4 U119-4 U106-4 U211-4 U198-9  
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 633: U67-4 U55-4 U42-4 U29-4 U16-4 U3-4  
 633: U42-9 U29-9 U16-9 U3-9 .W1 RAS A L  
  
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 634: U29-3 U133-3 U16-3 U119-3 U211-3  
 634: U93-3 U198-3 U80-3 U184-3 U67-3 U172-3  
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656: U100-13 U255-5 U186-16 .W2 OUT<14>  
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666: U112-4 U294-5 U121-16 .W2 OUT<9>  
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668: U73-13 U213-16 .W2 PAR OUT  
669: U234-14 U5-3 U108-3 U44-3 U148-3  
669: U31-3 U135-3 U18-3 U121-3 U213-3  
669: U95-3 U200-3 U82-3 U186-3 U69-3 U174-3  
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670: U18-5 U5-5 U163-5 U176-5 U188-5 U202-5  
670: U97-5 U84-5 U71-5 U59-5 U46-5 U33-5  
670: U20-5 U7-5 U150-5 U137-5 U123-5 U110-5  
670: U215-5 .W3 A0 A L  
671: U227-9 U57-7 U69-7 U82-7 U95-7 U200-7  
671: U186-7 U174-7 U161-7 U148-7 U135-7  
671: U121-7 U108-7 U213-7 U44-7 U31-7  
671: U18-7 U5-7 U163-7 U176-7 U188-7 U202-7  
671: U97-7 U84-7 U71-7 U59-7 U46-7 U33-7  
671: U20-7 U7-7 U150-7 U137-7 U123-7 U110-7

671: U215-7 .W3 A1 A L

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 673: U31-14 U18-14 U5-14 U163-14 U176-14  
 673: U188-14 U202-14 U97-14 U84-14 U71-14  
 673: U59-14 U46-14 U33-14 U20-14 U7-14  
 673: U150-14 U137-14 U123-14 U110-14 U215-14  
 673: .W3 A3 A L

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 675: U31-12 U18-12 U5-12 U163-12 U176-12  
 675: U188-12 U202-12 U97-12 U84-12 U71-12  
 675: U59-12 U46-12 U33-12 U20-12 U7-12  
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 676: U31-15 U18-15 U5-15 U163-15 U176-15  
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 676: U150-15 U137-15 U123-15 U110-15 U215-15  
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 677: U59-11 U46-11 U33-11 U20-11 U7-11

677: U150-11 U137-11 U123-11 U110-11 U215-11  
677: .W3 A7 A L

678: U227-14 U57-1 U69-1 U82-1 U95-1 U200-1  
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678: U20-1 U7-1 U150-1 U137-1 U123-1 U110-1  
678: U215-1 .W3 A8 A L

679: U225-14 U200-10 U186-10 U174-10 U161-10  
679: U148-10 U135-10 U121-10 U108-10 U213-10  
679: U95-10 U82-10 U69-10 U57-10 U44-10  
679: U31-10 U18-10 U5-10 U110-10 U123-10  
679: U137-10 U150-10 U163-10 U176-10 U188-10  
679: U202-10 U97-10 U84-10 U71-10 U59-10  
679: U46-10 U33-10 U20-10 U7-10 U215-10  
679: .W3 CAS OA L

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680: U135-17 U121-17 U108-17 U213-17 U44-17  
680: U31-17 U18-17 U5-17 U163-17 U176-17  
680: U188-17 U202-17 U97-17 U84-17 U71-17  
680: U59-17 U46-17 U33-17 U20-17 U7-17  
680: U150-17 U137-17 U123-17 U110-17 U215-17  
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682: U23-6 U137-2 .W3 IN<10>

683: U61-15 U150-2 .W3 IN<11>

684: U23-12 U163-2 .W3 IN<12>

685: U61-9 U176-2 .W3 IN<13>

686: U23-16 U188-2 .W3 IN<14>

687: U61-5 U202-2 .W3 IN<15>

688: U61-16 U20-2 .W3 IN<1>

689: U23-9 U33-2 .W3 IN<2>

690: U61-12 U46-2 .W3 IN<3>

691: U23-15 U59-2 .W3 IN<4>

692: U61-6 U71-2 .W3 IN<5>



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694: U61-2 U97-2	.W3 IN<7>
695: U23-2 U110-2	.W3 IN<8>
696: U61-19 U123-2	.W3 IN<9>
697: U113-3 U293-2 U7-16	.W3 OUT<0>
698: U113-8 U279-3 U137-16	.W3 OUT<10>
699: U126-8 U267-3 U150-16	.W3 OUT<11>
700: U113-17 U268-3 U163-16	.W3 OUT<12>
701: U126-17 U281-3 U176-16	.W3 OUT<13>
702: U113-13 U255-3 U188-16	.W3 OUT<14>
703: U126-13 U280-3 U202-16	.W3 OUT<15>
704: U126-3 U294-2 U20-16	.W3 OUT<1>
705: U113-7 U279-2 U33-16	.W3 OUT<2>
706: U126-7 U267-2 U46-16	.W3 OUT<3>
707: U113-18 U268-2 U59-16	.W3 OUT<4>
708: U126-18 U281-2 U71-16	.W3 OUT<5>
709: U113-14 U255-2 U84-16	.W3 OUT<6>
710: U126-14 U280-2 U97-16	.W3 OUT<7>
711: U113-4 U293-3 U110-16	.W3 OUT<8>
712: U126-4 U294-3 U123-16	.W3 OUT<9>
713: U11-5 U215-2	.W3 PAR IN
714: U73-4 U215-16	.W3 PAR OUT
715: U225-9 U57-9 U69-9 U82-9 U95-9 U200-4	
715: U186-4 U174-4 U161-4 U148-4 U135-4	
715: U121-4 U108-4 U213-4 U200-9 U186-9	
715: U174-9 U161-9 U148-9 U135-9 U121-9	
715: U108-9 U213-9 U95-4 U82-4 U69-4 U57-4	
715: U44-4 U31-4 U18-4 U5-4 U44-9 U31-9	
715: U18-9 U5-9 U163-4 U176-4 U188-4 U202-4	

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715: U20-4 U7-4 U97-9 U84-9 U71-9 U59-9  
715: U46-9 U33-9 U20-9 U7-9 U202-9 U188-9  
715: U176-9 U163-9 U150-9 U137-9 U123-9  
715: U110-9 U215-9 U150-4 U137-4 U123-4  
715: U110-4 U215-4 .W3 RAS A L

716: U228-7 U163-3 U59-3 U71-3 U176-3  
716: U84-3 U188-3 U215-3 U97-3 U202-3  
716: U20-3 U123-3 U33-3 U137-3 U46-3 U150-3  
716: U7-3 U110-3 .W3 WRITE A L

717: U222-2 U217-19 .WRITE 0 H

718: U223-6 U217-16 .WRITE 1 H

719: U234-6 U217-15 .WRITE 2 H

720: U228-13 U217-12 .WRITE 3 H

721: U25-1 U155-5 .WRITE BAD PARITY